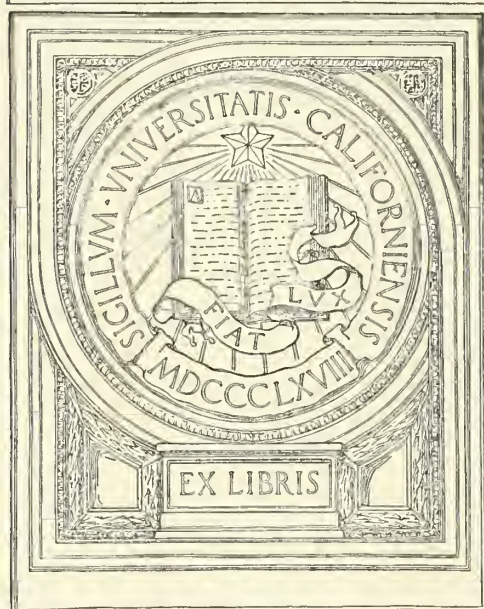


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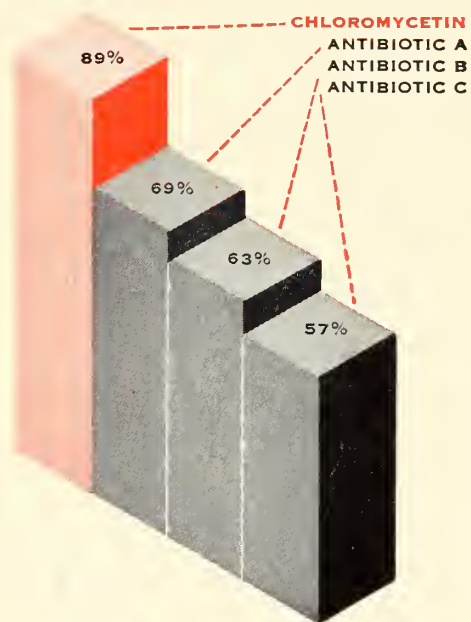
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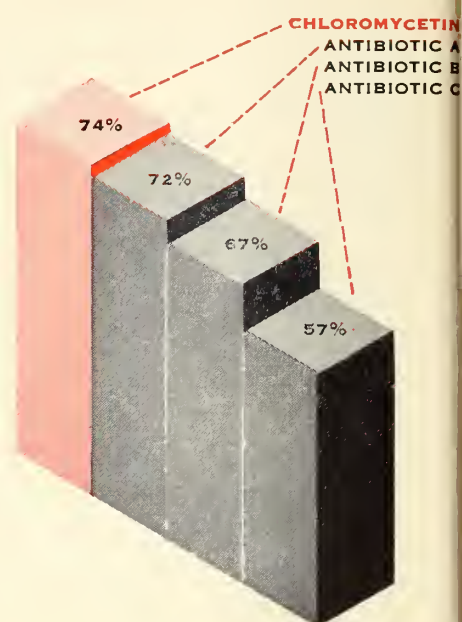
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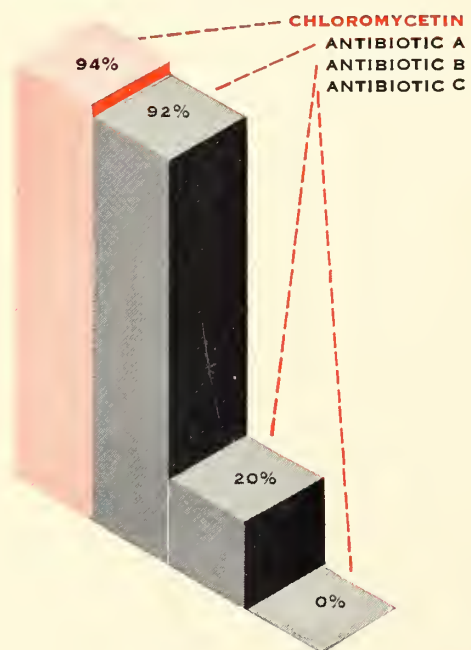
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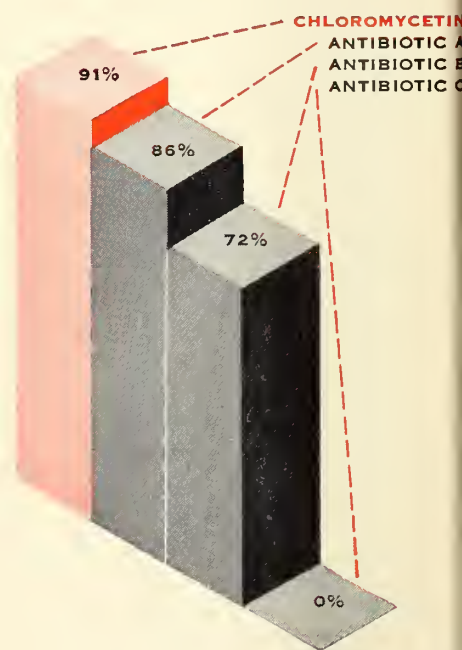
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ARIZONA MEDICINE

Journal of ARIZONA MEDICAL ASSOCIATION

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ARIZONA MEDICINE

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JANUARY, 1957

Original ARTICLES

COCCIDIOIDOMYCOSIS

Notes on Ecologic and Endemiologic Factors in Arizona

By Peter R. Meis, M.D.

Tucson, Arizona

COCCIDIOIDOMYCOSIS has been known for a generation to be endemic in Arizona. This discussion is to elaborate in some detail, first the factors which may influence the infestation rate in man and animals, and second, on the rate itself as demonstrated in studies at Davis-Monthan Air Force Base.

Physical characteristics which are commonly said to be necessary for the growth of the organism are: 1. Hot summer weather. 2. Mild winter weather. 3. Moderate rainfall. 4. Mildly alkaline soil. 5. Dust blowing winds. These factors, however, are present in areas not known to be infested. Some further factor may be present. In an unpublished paper read at the meeting of the American Veterinary Medical Association at San Antonio on 16 October 1956, Keith T. Maddy, Sen. Asst. Vet. of the United States Public Health Service made several extremely interesting observations. He discussed the Lower Sonoran Life Zone, a biologic zone which covers southern Arizona and extends in a half circle to the northwestern corner of the state. This zone extends from the valleys to an altitude of about 3,500 feet, more or less. Areas above 3,500 ft. such as Fort Huachuca, are islands in the zone with no small animal life characteristic of the zone. Maddy made the original observation that the creosote bush, *Larrea tridentata*, appears only in this zone and that therefore, the natural habitat of *Coccidioides immitis* could be identified by the coincidental presence of the plant. He found several isolated valleys in central Arizona where the creosote bush grew and coccidioidomycosis

was not known to be endemic. In these areas, he found the cattle to be coccidioidin positive, as they are in all endemic areas.

The reported incidence in Arizona of coccidioidomycosis in the past three years shows more than half the cases to be in Pima County. The expected incidence should be higher than reported in Pinal and Maricopa Counties. The writer has knowledge of many cases in Maricopa County that are unreported.

Correlation with the annual rainfall may well show relationship to the incidence in the following year. Reported incidence in Pima County in each calendar year has varied with the rainfall of the previous year, the infestation rate being much greater in the years following an unusually heavy rainfall. The soil infestation is very much greater in areas where water has remained for a day or two after a heavy rainfall. The author has trenched through such areas and found them rich in the mold at depths of more than 1 foot, whereas in soils on which water has not remained for many hours the fungus is rarely found at depth greater than 1 inch. Disturbances of the soil, as is done in clearing of vegetation preparatory to real estate development produces a distinct high infestation rate in both dogs and humans who move to the new, dust laden environment. The incidence rate at Davis-Monthan Air Force Base was studied in the second half of the year 1953. Both 1952 and 1953 were years of little rainfall. 1,090 persons with negative histories, negative chest x-rays and negative skin test were followed carefully by rechecks of skin test, x-rays and

questioning as to symptoms. The proven infestation rate was 11.8% in six months. The writer concurs in the general opinion that the infestation rate is at least 20% annually, so that five years residence in the Tucson area should theoretically produce a positive skin test in everyone.

In this study, 25 asymptomatic cases were found for each one having sufficiently severe symptoms that the patient required bed rest.

The morbidity rate in the irrigated cotton areas of Pima County is seemingly decreased sharply with the increased use of mechanical cotton pickers; however, the total number of human pickers is still very large, so that the question arises as to soil infestation being partially controlled by the use of powder fungicide dusted from aircraft. Of particular interest is a new fungicide used experimentally in 1955

and 1956, sold under the trade names of CAPTAN and ORTHOCIDE. This is N-tri chlor-methyl mercapto-4-cyclohexane -1,2 dicarboximide. It has been used in cotton fields, as a seed treatment, and on small fruits such as apricots. The toxicity for rats^{*} is rated as LD50mg/kg x 15,000, which is so little that serious consideration should be given to its use in both animal and human cases. At the instigation of Maddy several dogs with disseminated infestations, with draining surface lesions, positive sputa, and positive feces have been treated in the Phoenix area with CAPTAN. The production of spherules ceased and tissues became negative. No kidney or liver function studies were done either prior to or after treatment.

^{*}Fischer, Carl D. "Chemical Week" Vol. 79 No. 20, 17 Nov. 56
NOTE: Orthocide is a production of California Spray Chemical Co. and Captan is a production of Stauffer Chemical Co.



COMMENTS ON ARTIFACTUAL P.B.I. VALUES

Original Report of Vaginal Absorption of Iodinated Drug

By Clarence Robbins, M.D.

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IN THE 1930's the Journal of Biological Chemistry published several reports of efforts to analyze blood for iodine. These reports are interesting to review because they describe the early steps in the evolution of analytic techniques and physiological experiments and interpretation that led to our present day acceptance of serum iodine determination as a nice diagnostic procedure. The concentration of S P I, serum precipitable iodine, (or the synonymous P.B.I., protein bound iodine) or of its younger, more refined relative B.E.I., butyl extractable iodine, can be measured with considerable accuracy and is probably the best available method for estimating functional activity of the thyroid gland. Some investigators have gone so far as to declare that previous methods of estimating thyroid activity, notably the B.M.R. are hopelessly out of date and should be discarded. It was recently remarked that the B.M.R. machine had no value except as a money maker for the doctor who owned one. Like most extravagant statements, this is untrue. Measurement of total metabolism in terms of oxygen consumption can be a very important adjunct in evaluating therapy in thyroid disorders especially where inorganic iodides are used for their well known beneficial effects, as preoperatively in cases of toxic goitre, and also where the newer potent thyroid hormones such as levo-tri-iodo thyronine are used in the treatment of hypothyroidism. In these situations P.B.I. concentrations may be quite unreliable. Likewise radioactive iodine up-take studies may be seriously misleading. There can be no dispute as the value of P.B.I.'s and I-131 uptake studies as diagnostic tools, but I venture to say it will be a long time before Magnus Levy's contribution to thyroid physiology can be scrapped.

It would seem unnecessary to remark here that the ultimate value of P.B.I. measurement depends upon the accuracy of the analytic methods employed except to emphasize that the element is being measured in micrograms and accordingly technical and artifactual errors assume great importance. The fact that the range

of normal values is closely restricted, 4 to 8 mcgms. per ml. of serum; further heightens the importance of artifactual errors. Different analytic methods admit different technical errors. Thus the widely used acid oxidizing procedure yields a false low value in the presence of mercury. The euthyroid patient who has received a mercurial diuretic as recently as 48 hours prior to sampling of his blood may show a P.B.I. concentration at myxedema level. Mercury does not disturb the alkaline ashing procedure. In most laboratories the methods employed admit of errors due to administration of inorganic iodides whether given openly as Lugol's solution or sodium or potassium iodides, or hidden in a capsule of pan-vitamin mineral complex. The increments of P.B.I. following administration of inorganic iodine are particularly confusing. If they were always large they could be detected at once but in fact they are of variable and unpredictable magnitude. They are not composed of simple inorganic iodine because they cannot be washed from the precipitated protein with water. They can, however, be removed from a butanol extract by alkali which differentiates them from thyroxine or the material produced in blood by organic iodine dyes and drugs. It would appear that the method employing butyl alcohol extraction, simple because it obviates the common errors caused by iodides, would be the method of choice. Furthermore there is good statistical evidence that the B.E.I. is a more precise measure of circulating thyroid hormones than the usual P.B.I. Nevertheless B.E.I. determinations remain in the ivory towers while P.B.I. methods are increasingly employed by commercial laboratories.

Obviously what we need is a reliable method for determining the circulating thyroid hormones which obliterates errors due to organic iodine compounds as well as inorganic iodides. This may not be far in the future and it seems reasonable to expect that present studies of thyroxine migration by paper chromatography will yield important steps to a precise method.

In the meantime we have to be discontent with the fact that all of the iodinated contrast media used in x-ray diagnosis foul up any and

^o(Presented at Staff Meeting, Tucson Medical Center, 4 September, 1956.)

all of the present chemical methods. We have to wait at least two weeks after I. V. pyelograms probably more than 16 weeks after G B series, POSSIBLY forever after bronchograms, and PROBABLY forever after myelograms. Some drugs, notably di-iodoquin, the popular remedy for amoebiasis and iodo-thiouracil used in the treatment of hyperthyroidism, make P.B.I. determinations futile for many weeks or even months. Apparently the iodine of the drug combines with protein of the serum. This occurs *in vivo*, but not *in vitro*.

Fortunately, the artifactual values produced by iodinated dyes and drugs are for the most part large enough to be detected immediately. One commercial laboratory in California advertises with ethical delicacy that it would rather not analyze contaminated specimens and urges the physician to secure a careful history of dye and drug intake before subjecting his patients to the invalid and expensive test.

I am sure all of us are careful most of the time to inquire about ingestion or injection of iodine containing substances but one question I suspect we frequently overlook is "What have you inserted into your vagina lately?" A careful search of the literature fails to reveal any mention of artifactual values of P.B.I. caused by the vaginal absorption of iodinated drugs.

We have it from no less an authority than the ladies' journals that millions of women in the United States are suffering from *Trichomonas vaginitis*. How many of these millions are using Floraquin suppositories for treatment is the business of the G. D. Searle & Co., but certainly it must be a considerable number. Each Floraquin tablet contains 100 ml. of Di-iodoquin. Diodoquin itself contains 63.9 iodine. Therefore each Floraquin tablet contains 63.9 mg. of iodine. This is equivalent to the iodine content of 500 tablets of U.S.P. Thyroid Grs., 1 ea., which would make a rather clumsy suppository.

Studies conducted during the past year and reported here for the first time indicate that enough organic iodine is absorbed through the vaginal membrane to significantly alter the P.B.I. of serum.

Serum P.B.I. determinations were made in paired samples of blood drawn before and after treatment. The before treatment specimen was obtained within 16 hours prior to vaginal in-

sertion of one or in most cases two tablets of Floraquin each containing 100 ml. Di-iodoquin. The after treatment specimen was drawn within 12 hours following the last insertion. In a few instances additional later specimens were obtained in an effort to ascertain the "decay time" of the artifactual values.

In a total of 23 paired serum analyses an artifactual increment was found without a single exception. Sera from 16 euthyroid subjects and from 7 hypothyroid patients showed essentially the same increment with a mean value of 2.2 mcgms., a maximum of 6.3 mcgms. and a minimum of 0.6 mcgms.

The largest increase occurred in the case of a patient who began treatment the day following conization of the cervix. One of the two smallest increases occurred in a patient who had been taking "Thyrar", one-half grain, daily for many months prior to the first blood sampling.

The data indicate that duration of treatment may not be significant in respect to the size of the increment: a single two tablet dose may yield a rise in P.B.I. nearly as large as that found after fourteen consecutive days of treatment. From scanty data available in 3 subjects whose sera were analyzed serially it appears that significant traces of artifactual increment may persist for at least one week after cessation of treatment. In one case serum P.B.I. had dropped to pre-treatment level after 10 days.

The real significance of the artifactual values caused by vaginal absorption of di-iodoquin becomes apparent in the following observations:

1. In 8 of the 16 euthyroid subjects the artifactual increment pushed normal P.B.I. values into the zone of suspect or probable hyperthyroidism, 8.2 to 11.0 mcgms.

2. In 6 of the 7 hypothyroid patients whose original P.B.I. values fell within the range of 0.6 to 3.5 mcgms., the increment resulted in pushing the P.B.I. values into the zone of normal. One frankly myxedematous patient with an original P.B.I. of 1.0 mcgms. ended up with a P.B.I. of 4.7 mcgms. after one week of nightly insertion of 2 Floraquin tablets.

It would seem obvious that the small artifactual values are more likely to be confounding than the artifacts whose magnitude immediately jumps to the least discerning eye.

The author gratefully acknowledges the generous cooperation of G. D. Searle and Co. in supplying Floraquin tablets and funds to pay for the serum P.B.I. analyses, all of which were made by the Bio-Science Laboratories, Los Angeles.

TABULATED DATA

| Patient | Floraquin intravaginally Tabs. inserted daily | No. of days | Serum P.B.I. mcgms. per ml. Before | After | Increment |
|--------------------------|--|-------------|---------------------------------------|-------|-----------|
| EUTHYROID | | | | | |
| PATIENTS: | | | | | |
| V. K. | 2 | 3 | 6.1 | 6.7 | 0.6 |
| M. P. | 2 | 1 | 5.5 | 6.3 | 0.8 |
| M. P. (later study) | 2 | 1 | 5.3 | 6.5 | 1.2 |
| C. D. | 2 | 8 | 5.9 | 7.0 | 1.1 |
| L. B. | 2 | 3 | 6.2 | 7.5 | 1.3 |
| W. W. | 2 | 1 | 6.6 | 8.5 | 1.9 |
| | | | | 6.8 p | 10 days |
| | | | | 6.8 p | 20 days |
| L. H. | 2 | 5 | 6.3 | 8.3 | 2.0 |
| A. G. | 1 | 14 | 4.2 | 6.3 | 2.1 |
| M. S. | 1 | 10 | 5.0 | 7.2 | 2.2 |
| D. P. | 1 | 10 | 6.0 | 8.3 | 2.3 |
| J. C. | 2 | 5 | 5.4 | 7.9 | 2.5 |
| H. T. | 2 | 7 | 7.8 | 11.0 | 3.2 |
| D. C. | 2 | 8 | 4.7 | 8.2 | 3.5 |
| D. L. | 1 | 10 | 6.1 | 9.7 | 3.6 |
| I. R. | 1 | 5 | 4.8 | 9.0 | 4.2 |
| | | | | 5.8 p | 10 days |
| | | | | 4.6 p | 5 mos. |
| V. L. | 2 | 10 | 4.7 | 11.0 | 6.3 |
| HYPOTHYROID | | | | | |
| PATIENTS: | | | | | |
| M. C. | 2 | 2 | 3.5 | 4.1 | 0.6 |
| A. C. | 2 | 9 | 0.6 | 1.7 | 1.1 |
| E. P. | 2 | 3 | 3.4 | 4.8 | 1.4 |
| K. W. | 2 | 1 | 3.4 | 5.1 | 1.7 |
| W. W. | 2 | 5 | 3.2 | 5.4 | 2.2 |
| P. B. | 2 | 4 | 3.4 | 5.8 | 2.4 |
| A. W. | 2 | 7 | 1.0 | 4.7 | 3.7 |
| | | | | 3.3 p | 9 days |
| | | | | 2.6 p | 13 days |



PAINFUL SHOULDER

By S. Kent Conner, M.D.

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SHOULDER pain is one of the most common complaints and often its etiology is difficult to determine. The painful shoulder may not be due to intrinsic lesions of the shoulder itself; the etiology may be located in the cervical region, thoracic region or abdominal region. This paper will deal with the more common causes of shoulder pain.

The pertinent facts of the history should include the following: (1) **PREDISPOSING FACTORS** such as trauma, occupation, exposure, and illness; (2) **NATURE OF ONSET** — gradual or acute; (3) **DURATION** of previous attacks; (4) **LOCATION** — is it limited to the shoulder with marked tenderness? Is it associated with neck stiffness and pain? Is it radiated to other locations? Is the hand involved? (5) **MOTION** — Is there limitation of arm movement? Is the pain aggravated by motion of the shoulder or cervical spine? Is it associated with other peripheral joint involvement? At this point it is well to remember a few generally accepted statistics — (1) Approximately 80% of all painful shoulders are due to tendinitis with or without bursitis; (2) Arthritis of the shoulder joint alone probably does not exceed 5% of all cases of shoulder pain; (3) Fibromyositis probably accounts for 8%; (4) Approximately 10% of painful shoulders is accounted for by acute traumatic lesions, such as soft tissue contusions, sprains, ruptured tendons and skeletal derangements such as fractures and dislocations.

Examination is best performed with the patient stripped to the waist and seated on a stool. **INSPECTION** of both shoulders for any asymmetry due to muscular atrophy or swelling should be made. **PALPATION** should be for tenderness over the head of the humerus, muscular tenderness of the shoulder girdle and of the cervical region and acromioclavicular and sternoclavicular joints, the hand and the scalenus muscles. **MOTION** should be evaluated first by the patient actively attempting to raise the hands above his head, then placing his forearm horizontally behind his back. Passive motion by the examiner should then be attempted. At this point it is well to remember that the sum of the shoulder motion is due to the simultaneous

participation of the scapular humeral, scapular thoracic, acromioclavicular and sternoclavicular articulations. Is there limitation of extension, flexion, rotation and lateral flexion of the cervical spine? It is most helpful if one is acquainted with the anatomy of the shoulder girdle, as well as the cervical region. The rotary muscular tendinous cuff is formed by the conjoined tendons of the supraspinatus, infraspinatus, teres minor and subscapularis muscles being responsible for the rotation of the humerus and the setting of the head of the humerus in the glenoid cavity for abduction by the deltoid. Degeneration in this conjoined tendon is frequent, and with elevation of the arm friction is produced in the rotary cuff as it slides under the acromion process and adjoining ligaments. Attrition, due to the upright position of man, is the usual primary cause of muscular tenderness and degeneration in this area, and other forms of trauma may be responsible in some cases.

Table I presents a simplified classification of etiological causes of painful shoulder. Such a classification is difficult, usually unsatisfactory, and often incomplete. The most frequent and important causes of painful shoulder will be discussed separately at this time, as to diagnosis and treatment. The pathological findings in the various tissues will be dispensed with in this paper.

I. TENDINITIS OF THE SHOULDER, MORE COMMONLY KNOWN AS BURSITIS. Tendinitis may involve one tendon or it may be multiple, and usually involves the tendon of the supraspinatus muscle. As previously noted, there is usually a focal degeneration of the tendon fibers which may be associated with rupture of some of these fibers and calcific deposits. This may produce an inflammatory reaction of the subacromial bursa and expulsion of the degenerated material into the bursa, where it may be absorbed in a matter of hours or produce intrabursal adhesions, resulting in limitation of motion. The cause may be considered to be trauma, whether due to postural strain, overuse, partial rupture of the musculotendinous cuff, direct injury, prolonged im-

TABLE I
Etiological Classification

ARTICULAR: (Shoulder or Cervical Spine)

1. Traumatic (Fractures, dislocations, disc rupture, sprains, occupational, whip-lash, radiculitis).
2. Infectious (Specific).
3. Arthritis (Rheumatoid, degenerative, traumatic, infectious).
4. Collagen Diseases (Lupus erythematosus, scleroderma, dermatomyositis).
5. Neuropathic (Diabetic, Charcot's).
6. Neoplastic (Osseous, primary, metastatic).

NON-ARTICULAR: (Shoulder and cervical soft tissue — inflammation, degeneration, trauma, congenital anomalies, postural, occupational, neurological, vascular).

1. Tendinitis (Degenerative, traumatic, occupational and others) and/or Bursitis (Inflammatory).
2. Periarthritis (Frozen shoulder).
3. Shoulder-Hand Syndrome (Reflex, neurovascular, dystrophy, viscerogenic — thoracic and abdominal).
4. Scalenus Anticus Syndrome and Cervical Rib (Hypertrophy and congenital anomalies).
5. Fibromyopathies (Myalgias, capsulitis, traumatic, collagen diseases).
6. Vascular (Arterial, venous, lymphatic — obliterative, traumatic, inflammatory, surgical).
7. Neurological (Radiculitis, neuritis, neoplastic, infectious, syringomyelia, and others).
8. Neoplastic (Primary, metastatic, lymphomas).

PSYCHOGENIC:

mobilization, or repeated irritation due to pressure of the rotary cuff against the coraco-acromial ligaments and the acromion process. In this condition diagnosis is relatively easy as there is usually acute pain involving the point of the shoulder, with point tenderness over the involved tendon, which is usually over the greater tuberosity below the acromial process. This is associated with marked limitation of rotation and abduction of the humerus. On occasion pain may be radiated into the arm, usually near the insertion of the deltoid, and occasionally in the fingertips. The patient may

also experience pain radiation into the cervical region of the involved side, associated with muscular spasm due to the tendency to hold the arm in the least painful position. The diagnosis may be aided by fluoroscopic or x-ray examination of the shoulder girdle. Only approximately 50% of the cases of acute tendinitis and bursitis reveal x-ray evidence of calcification. Calcification may occasionally be present in these tendons without any particular symptoms.

The first aim of therapy in this condition is the relief of pain for the patient's comfort, as well as the mobilization of the shoulder joint to prevent permanent limitation of motion by adhesions and occasionally associated periarthritic arthritis. This may be accomplished most rapidly by procaine injections into the area of point tenderness. In the absence of calcification this is an important diagnostic aid, as acute pain is relieved almost immediately and the shoulder motion is increased. At the same time, the important problem is to relieve the inflammation of the tendon, bursa, and other periarticular tissues if it be present.

While the majority of these cases will recover by conservative therapy of mild pain-relieving drugs and physiotherapy (consisting of heat, passive and graduated active exercises), this form of treatment alone usually takes several days and frequently prolonged periods of convalescence. I find that combining this form of therapy with procaine infiltration of the bursa and tendon, and the injection of hydrocortisone acetate, one or two cc (25-50 mgm), in the same area usually gives relief within fifteen to thirty-six hours. It is necessary to give this form of injection usually on one to four occasions, every other or every third day. In approximately 90% of the cases this will give the most prompt and complete relief in the shortest period of time, thereby reducing the hazard of prolonged, continuous, and increasing inflammation which may eventually limit joint motion. It may be presumed that the infiltration of procaine and hydrocortisone also possibly hastens rupture of the necrotic material into the bursa, aiding more rapid absorption of the degenerated and calcified products.

The second choice of treatment is Butazolidin, 200 mgm t.i.d., p.c., for five to ten days in conjunction with the previously mentioned conservative program. It will give relief in approxi-

mately 70% to 80% within two to seven days. In patients where there are contraindications to the use of this drug, it should be avoided.

Roentgen therapy will give adequate relief in approximately 60%; however, this is slower and usually more expensive.

With these three forms of therapy practically all these patients will obtain adequate results. The calcifications usually disappear in weeks with either therapy. Decompression by needle or surgical intervention is seldom necessary. It may be possible on occasions to remove some of the calcific deposit while infiltrating procaine preceding hydrocortisone acetate injections.

II. PERIARTHRITIS of the shoulder is characterized by stiffness, limitation of motion, and pain at rest, which is aggravated by attempted motion. This is due to periarticular fibrosis mainly involving the capsule of the joint, and may be caused by any of the factors which produce shoulder pain. Coventry believes that for this condition three factors must be present: (1) The peri arthritis personality must be present; (2) Disuse; (3) Pain of any sort, even including viscerogenic reflex pain. The involvement and disability may vary from slight limitation of motion with minor pain, which usually occurs early, to severe pain and limitation with the so-called "frozen shoulder." This pain may be referred into the arm, forearm and hand, with associated stiffness and contractures, as well as being referred into the cervical region. This may be associated with swelling of the hand and forearm, and limitation of motion of the fingers which also become tender and painful. Therapy in this condition is usually other than satisfactory, due mainly to the fact that it is not recognized until the later stages of its progress; therefore, early recognition and prevention of immobilization in certain individuals is the secret of successful therapy. Treatment should be directed toward relief of the pain and early mobilization, prevention of original disuse, associated with physiotherapy consisting mainly of deep heat, massage, stretching, passive and active exercises. Hormonal therapy in this condition will be discussed under Shoulder-Hand Syndrome.

III. TRAUMATIC LESIONS, fractures, dislocations, ruptured tendons, direct contusions and sprains, both of the shoulder and cervical spine, will not be discussed. Ruptured disc or cervical arthritis may produce radiculitis of the

brachial plexus with radiation into the shoulder, arm, forearm and hand. This can usually be diagnosed from the history, physical examination and roentgenographic inspection of the cervical spine. Occasionally there will be motor involvement with atrophy and weakness of muscles involving the shoulder girdle and upper extremities. There may be other evidence of nerve root involvement, as shown by paresthesia, anesthesia, etc.

Worthy of discussion is the so-called "whiplash" injury of the neck. This is usually the result of a sudden snapping hyperextension followed by flexion of the cervical spine, most commonly occurring when a car in which the patient is riding is struck from behind. The majority of this type of injury are followed by pain and stiffness, with limitation of motion of the cervical spine associated with muscular spasm and tenderness of the cervical region, usually being aggravated by hyperextension, flexion, rotation, or pressure on the top of the head. This is usually relieved by cervical traction, deep heat and massage. It may be necessary to repeat this on several occasions. It is always advisable to precede any treatment of these cases by x-ray of the cervical spine, which frequently will reveal loss of the normal lordotic curve. Most cases of this type are found in individuals past the age of forty and usually there will be evidence of marginal osteophyte formation which may reveal definite evidence of encroachment as well as narrowing of one or more of the intervertebral discs, which is usually indicative of previous degenerative disease or injury and may prolong the period of recovery. Surgical intervention is seldom necessary in patients adequately treated with traction, heat, massage, and from a postural standpoint.

IV. SCALENUS ANTICUS SYNDROME AND CERVICAL RIB. This condition is produced by pressure and irritation of the brachial plexus and compression at the subclavian artery, usually involving the nerves of the lower portion of the brachial plexus. The scalenus anticus muscle is enervated by the brachial plexus itself and this may produce a secondary spasm of the scalenus anticus muscle, thereby adding further pressure and irritation. The onset of this condition is usually in the fourth decade when the shoulder girdle has become lower, stretching the brachial plexus or subclavian artery over a cervical rib or the first thoracic

rib. The scalenus anticus muscle may become hypertrophied or may be injured by trauma; there may be a high fixation of the ribs to the sternum, or a low origin of the brachial plexus. There may be other lesions of the cervical spine, neoplastic or infectious in nature. In some instances pain of the shoulder joint may produce spasm of the scalenus anticus muscle with the resultant syndrome. Subjectively the patient complains of mild to excruciating pain, tingling, numbness, and occasionally coldness which may extend from the cervical, scapular or pectoral regions down the entire arm, usually being more pronounced along the ulnar nerve distribution. In many instances this may resemble the pain of angina. It may be described as a tired, heavy, dragging, weak sensation in the involved extremity. Objectively there is usually tenderness over the lower portion of the scalenus anticus muscle just above the clavicle. There may be anesthesia, paresthesia, and occasionally hyperesthesia. The involved extremity may be cold; there may be discoloration, evidence of skin atrophy and absence of the radial pulse, particularly when the head is rotated to the opposite side. Shoulder motion is usually unimpaired. The important diagnostic features are aggravation of the symptoms by pressure over the lower portion of the scalenus anticus muscle, certain activities or downward stretching of the arm, turning of the head to the opposite side, and there is occasional relief by elevation of the shoulder.

Therapy in this condition depends entirely upon the severity of the symptoms. Where the symptoms are mild or recurrent in nature, they may be treated conservatively with correction of postural defects, and sleeping habits; elevation of the arm, and avoiding activities that precipitate these attacks. In the more persistent, disabling, painful scalenus anticus syndromes procaine injection of the scalenus anticus muscle may give temporary relief; also, sleeping with the arm in certain positions; physiotherapy to strengthen the trapezius muscles as an aid in producing better elevation of the shoulder and the section of the scalenus muscle at its insertion next to the first rib. In those cases where a cervical rib is present, the rib should be removed surgically, as well as division of the scalenus anticus muscle. In this condition the sedimentation rate is usually normal. Other conditions that may produce brachial plexus ir-

ritation with symptoms of the scalenus anticus syndrome should be corrected. X-rays of the cervical spine, shoulder girdle and chest are important diagnostically, particularly in determining the presence of cervical rib and other lesions which may cause brachial plexus irritation.

V. THE SHOULDER-HAND SYNDROME OR POSSIBLY SYMPATHETIC AND SPINAL REFLEX DYSTROPHY. This condition may occur without any apparent cause but the majority of cases are noted following myocardial infarction, cerebrovascular accident with hemiplegia, immobilization of the arm as a result of injury or fracture, or degenerative changes of the cervical spine with encroachment of the foramen. Apparently disuse is an important factor. It may be bilateral but is usually unilateral, and apparently there is a close relationship between this and periathritis of the shoulder. Symptoms usually begin as painful disability of the shoulder, either gradual or acute, developing over a few hours to several weeks. This is soon followed by generalized swelling and stiffness of the fingers and hand, and at times the hand may be involved first. Over a period of a few months there is gradual relief of shoulder pain, as well as decreased swelling of the fingers and hand, but flexion deformities and stiffness of the fingers usually remain and become more pronounced. This may be accompanied or followed by atrophic changes of the skin and osteoporosis of the bones of the wrist, fingers and head of the humerus. The resulting stiffness and contractures of the fingers usually remain indefinitely. Associated with these changes are other vasomotor disturbances, sweating, temperature changes, and occasionally changes of color. Important therapeutic success results from keeping constantly in mind the possibility of this condition following certain illnesses and injuries. The earlier treatment is instituted, the better the results obtained. Conservatively this consists mainly of physiotherapy, (massage and heat), and prevention or relief of the exciting cause. Probably one of the most important measures to use in this condition is repeated stellate ganglion blocks, which theoretically should interrupt the sympathetic reflex influence; and early institution of steroid therapy, particularly prednisone and prednisolone, and local infiltration of hydrocortisone. Often relief is of short duration or none at all. There is no completely

satisfactory therapy in this condition and contraindications to steroid therapy should be kept in mind.

VI. ARTHRITIS. As arthritic involvement of the shoulder alone occurs in probably less than 5% of the cases of painful shoulder, this does not become a very difficult problem. If there is general involvement of other peripheral joints with rheumatoid arthritis or degenerative arthritis, the etiological cause is more simplified. Here x-ray findings, as well as laboratory, are often helpful. Traumatic or infectious arthritis may also be included, as well as neuropathic forms due to conditions such as diabetes and Charcot's disease of the joints. Cervical spondylitis, whether traumatic, degenerative, rheumatoid or infectious, is usually apparent by the

distribution of pain, x-ray findings of the cervical spine, laboratory examinations, and lack of shoulder findings on physical examination.

VII. MISCELLANEOUS CAUSES OF SHOULDER PAIN. These consist of fibromyopathies, neoplasms, collagen diseases other than rheumatoid arthritis, neuritis, syringomyelia, herpes zoster, vascular lesions, and surgical procedures. These will not be discussed; the majority of these become self evident with adequate history, physical examination, roentgenographic studies, and laboratory procedures.

SUMMARY: The most common and difficult causes of shoulder pain have been discussed, and therapy of each has been outlined. While this discussion is far from complete, it does cover the most common problems encountered.



RATIONALE FOR VASOCONSTRICTIVE THERAPY OF INFLAMMATORY EDEMA*

By Wallace Marshall, M.D., A. William Kozelka, Ph.D., M.D.
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THE PERSUAL of current dermatologic literature for specific information as to the role of edema in various dermatologic disorders reveals a paucity of information on edema which is applicable for the busy physician. Edema is a commonly concomitant finding which accompanies many diseases, both of the skin and of other tissues and organs.

Edema causes the omnipresent swelling in parenchymatous tissue which is produced by the process of inflammation. Edema (1) is defined as an "excessive accumulation of fluid in the tissue spaces; due to disturbances in the mechanisms of fluid exchange. There may be a decrease in osmotic pressure of the plasma from reduction in protein concentration, increased hydrostatic pressure in the capillaries due to cardiac failure, increased permeability of the capillary walls from injury or inflammation, or there may be obstruction of the lymph channels."

The significance of edema in disease has been of prime importance to most inquisitive physicians since the first description of Celsus.

Edema is only one manifestation for the presence of inflammation. Hence, one cannot exclude the fundamental condition of inflammation when the highly important subject of edema is to be considered. Dible(2) recorded that "the reaction of living tissues to injury is known as inflammation." Christopher(3) wrote that inflammation is the most fundamental of all pathologic processes. He noted that "not only is the surgeon concerned with removing irritants and aiding the tissues to resist their action, but he produces some degree of inflammation with every stroke of the knife. Moreover, inflammation blends so imperceptibly with the process of repair that it is impossible to say in any given case where one ceases and the other begins."

Wounds are characterized by the cardinal signs of inflammation which are rubor (redness) turgor (edema or swelling), calor (heat), dolor (pain or itching) and functio laesa (loss of function). Some pathologists include only those as-

pects of local change which are exudative in nature when considering the process of inflammation(4).

In spite of being obviously important, the subject of tissue edema has not received much enlightening information in the literature as to its exact role in disease.

The authors questioned some colleagues about their thoughts as to the significance of edema. Few of these doctors placed much stress on its presence. The mutual thought on this topic was that something should be done to relieve its pressure if it produced discomfort to the patient or if it interfered with normal function.

This reaction reminded the authors of the profession's attitude to the presence of pus many years ago. Pus was laudable at that time. However, the passing years have changed the profession's attitude to "laudable pus" when its real significance became both known and understood.

Karsner(5) wrote: "The inflammatory reaction is principally on the part of the mesoblastic tissue. Included are (a) changes in the blood vessels and blood within them, and (b) proliferation of cells of the supporting connective tissue. These are concerned with all kinds of exudative inflammation. Parenchymal cells are involved in what is called alternative inflammation, but that involves degeneration and necrosis rather than proliferation. The blood vascular reaction begins almost immediately after injury. The reaction in the connective tissue is delayed for a short time but may be observed in less than a half hour. The vascular alterations lead to exudation. Cells of the exudate and some of those of the fixed tissues remove debris and bacteria; they cleanse the region."

However, this cleansing action through exudation, if it reaches uncontrollable proportions, can create a most serious situation by this outpouring of blood serum, as in the case with extensive burns. Hence, such an untoward and unbridled exudative situation can very well lead to a very serious and severe state of hypoproteinemia(6).

One of us demonstrated the pathologic action

*Read before the monthly medical staff meeting, Two Rivers Municipal Hospital, May 8, 1956.

which trauma is quite capable of exerting on parenchymatous tissue. The mere presence of "locked-in" blood serum might be capable of releasing leukotaxin (Menkin) which is capable of attracting a definite fibroblastic response(7). Such a bodily reaction is connected definitely with the early phase of tissue healing. However, if such a response becomes marked it can initiate a piling-up of fibroblasts. Keloids or hypertrophic scars may well be the end result.

In order to treat such unwarranted tissue response, Gathings(8) employed hyaluronidase and Kutapressin. This investigator reported that "this is probably the best method for treating keloids and hypertrophic scars with the aim of causing softening and resolution."

Recently, it has been demonstrated that hyaluronidase is biologically antagonistic to the bioflavinoids, such as hesperidin(9) and quite possibly the concomitant use of vitamin C, which definitely exerts a synergistic action with these bioflavinoids.

The exudative phase, connected with the highly important phenomenon of inflammation, is enhanced definitely through vasodilatation. The blood vessels in the affected area become dilated and hyperemia is produced. Along with vasodilatation goes increased capillary permeability and a disturbed osmotic pressure of the walls in the vascular tree. Hence, an outpouring of fluid results in the parenchymatous tissue. This is known as edema.

Edema is the principal cause for tissue swelling. Boyd(10) stated that "the exudate which collects at the site of irritation is partly derived from the blood (hematogenous), partly from the tissues (histogenous). The various forms of leucocytes of the blood migrate through the vessel walls; the blood plasma also passes out, and gives rise to the formation of fibrin; the wandering cells of the tissues accumulate at the site of irritation. These three constitute the inflammatory exudate." Boyd states also that "the amount of the exudate varies greatly, depending on two main factors, the irritant and the site. (1) The bite of a mosquito and the sting of a nettle are examples of irritants which cause a marked outpouring of fluid. In a blister the exudate is almost serous . . . (2) The more open the tissue, the greater will be the exudate. It is most marked in serous sacs (pleurisy, peritonitis). In loose cellular tissues the fluid

may be abundant . . . In such dense structures as bone the amount is negligible"(11).

Boyd gave a poignant relationship of inflammatory changes to the well-known cardinal signs of inflammation(12). He related that "the heat is due to the increased amount of blood flowing through the part. The redness is also caused by the local hyperemia. The swelling is to be attributed in part to the vascular dilatation, but much more to the accumulation of exudate in the tissues. The chief constituent of the exudate responsible for the swelling is the lymph, the accumulation of which leads to inflammatory edema . . . The pain is caused by pressure on the nerve endings . . . Loss of function, varying in degree is partly due to pain, partly due to destruction of tissue," and possibly, we might add, because of the infiltration of tissue by the edema which invades the injured areas.

According to Moore(13) the causes for shock are due to capillary injury and increased capillary and cellular permeability, which produce marked changes in fluid and electrolytic economies of the body. Moore(14), in discussing the pathologic alterations in effective filtering pressure, states that "normally the outflow and the inflow from the vessels are delicately balanced, but under pathological conditions the outflow may greatly exceed the inflow, and fluid may accumulate in the tissues — a condition designated as 'edema'. Thus if the gradient of pressure is shifted toward the venous side by arteriolar dilatation, as in local or general increase of temperature and inflammation, greater amount of fluid will promote the movement of fluid from blood to tissue. Generalized edema or an anasarca is usually more conspicuous in the lower extremities, where the hydrostatic pressure of the long column of blood is effective."

It appears obvious that the production of tissue swelling is the result of edema formation. Edema is but a part of any viable tissue's reaction to injury. If this formation becomes excessive, many substances wholly important to the body's economy can become lost. Vital protein substances and electrolytes are excreted in the bandages which cover such wounds. Any clinician has only to remember such marked losses which arise in connection with extensive burns. If allowed to persist for some time, and if these precious substances and fluids are not

replaced rapidly, shock can be expected. Hence, transfusions are employed to replace such losses. Pressure bandages are used to stop or at least control the loss of these life-sustaining materials.

Therefore, it is mandatory that each clinician employ every therapeutic means to conserve those important elements which are found in the exudative outpouring as the result of burns, disease, or other aspects due to trauma.

This subject is too comprehensive to review all the conditions where such massive loss of tissue fluids exist.

This subject of edema formation and its extravasation from the body's economy has been a problem which has intrigued the writers for many years. Perhaps this conservation of edematous exudate with vasoconstrictive means is the reason why Sano and Smith(15) studied the effect of lowered temperature upon fibroblasts which were grown in vitro. These investigators found that temperatures between 5 and 10 degrees Centigrade were bacteriostatic. Furthermore, these observers discovered that temperature of 20 to 25 degrees Centigrade were adequate for wound healing in the deeper tissues where connective tissue repair was taking place. It has been known generally for many years that cold causes a narrowing of the apertures in blood vessels. Vasoconstriction, through the application of cold as with the use of ice packs slows the circulation around a healing wound. Thus, the products of metabolism remain in close contact with the cells for a longer time than they could if the blood stream became accelerated.

It is known that the use of a firm compression bandage produces some vasoconstriction. This same vasoconstriction effect can be produced at least partially through the use of tension sutures which compress the gauze dressing of wounds. We have had plenty of opportunities to test this belief, and we have observed both the better conservation of tissue fluid coupled with a more rapid healing rate of such surgical wounds. Furthermore, the chance for the formation of hypertrophic scars and keloids appears to be lessened markedly if the above measures are employed.

As has been stated heretofore, severe burns are notorious for producing marked losses of precious tissue fluids through overproduction and loss of edematous fluids. To put our hypo-

thesis to a test, and in order to determine if vasoconstriction of a burned area can enhance the healing process, we compared vasoconstricted burns with those cases who were not given vasoconstrictive measures(16). It was found that the excessive formation of tissue edema distinguished second degree from first degree burns. We thought that second degree burns could be converted into first degree burns by inhibiting this serous exudate. And so a small series of cases with second degree burns were treated with a sulfathazole-allantoin ointment with compression bandages. The average healing time was 34 days per case. Then a similar series of cases with second degree burns were treated in like fashion. However, beforehand, each case was given a non-toxic injectable material* subcutaneously to vasoconstrict the burned areas. It was found that when vasoconstriction, ointment, and compression bandaging were employed, these burns healed nearly five times as fast as when this vasoconstricting agent was not used. Therefore, it seemed possible to convert second degree burns into first degree burns and thus lessen the average healing time for these burned areas.

We felt that the trauma connected with child birth produces marked edema in the post-gravid uterus. Hence, post-partum lochia could be considered as a special form of exudation. It was our desire to determine if vasoconstrictive measures in these post-partum patients would control the lochial discharge(17). It was found that Kutapressin, a new non-toxic selective vasoconstrictor, was successfully used in 68 consecutive post-partum cases to suppress lochial discharges. By the sixth post-partum day, the lochial discharges were eliminated. Furthermore, uterine involution appeared to keep pace with lochial control under this therapy, while those patients in the control group, and who had not received Kutapressin (vasoconstrictive) therapy, showed no similar findings.

Edema production is marked in cases with poison ivy dermatitis. Local measures, such as moist compresses with Burow's solution, are used routinely to relieve the intense itching caused by the excessive formation of tissue edema in the integument. It has been found

*Kutapressin, a non-toxic vasoconstricting aqueous solution which is prepared from liver by a series of fractionations. This material is manufactured by the Kremers-Urban Company of Milwaukee. It has been demonstrated definitely that Kutapressin will not affect systemic blood pressure.

that the signs and symptoms produced by contact with poison ivy in susceptible patients can be relieved rather dramatically by producing vasoconstriction in these edematous skin areas with the use of Kutapressin(18).

Unpublished observations by the authors have been obtained in other cases where the presence of edema is an important factor. Cases with angioneurotic edema, Quincke's disease, and pruritus ani have responded adequately to therapy with the non-toxic vasoconstricting injections. Although our experiences with cases of hydrocele, hydrothorax, and ascites, due to hypoproteinemia are not extensive, the therapeutic results have borne out the contention that vasoconstrictive measures, as with the use of Kutapressin, bring highly acceptable results wherever the presence of edema happens to occur, and if other concomitant serious pathologic lesions, such as malignancies and cardiac decompensation, are not present.

It is not the intent of the authors to give anyone the idea that the use of this vasoconstriction procedure produces a completely specific result. But as far as we are aware, this procedure appears to be the best which happens to be available at this time.

We feel sure some colleague will desire to mention the use of the steroids for the treatment of such edematous conditions as have been mentioned in the course of this paper. Allow us to quote the experience of Professor Cleveland J. White, of Chicago, who, while discussing the problem of chronic urticaria(19), had the following to state: "I might mention at this time that Kutapressin used symptomatically in my hands over the past seven months, has given brilliant results. This preparation is a vasoconstrictor put out by the Kremers-Urban people in Milwaukee . . . It is amazing the number of cases I have had which did not respond to the steroids, but did respond to Kutapressin in symptomatic relief; and sometimes resulted in a definite cure while we were attempting to uncover the etiologic factors."

CONCLUSIONS

The exudative aspects of edema probably exert a cleansing action in traumatized tissue. If the exudate becomes inspissated, fibromatous changes may occur, as exemplified by hypertrophic scars and keloid formations. The treatment of edematous states, as in burns, the post-partum uterine lochias, and exudative lesions, as seen in poison ivy cases, show more marked and more rapid healing when such areas are vasoconstricted. It is the opinion of the authors that edema does not serve a very useful purpose. Its suppression brings about better healing in those varied diseases which have been treated by the authors with vasoconstrictive measures.

Recently, Overman(20) wrote: ". . . Some attempts should be made to reduce edema whenever and wherever it forms . . ." This constitutes important advice to the clinician whenever this aspect of inflammation is discovered.

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TRICHINOSIS MYALGIA: ITS CONTROL AND TREATMENT WITH REPOSITORY TUBOCURARINE

A Case Report

By Edwin A. Busse, M.D.
Tucson, Arizona

THE CONSUMPTION of raw or inadequately cooked pork sooner or later makes the eater liable to trichinosis, one of the more serious parasitic diseases. Gould(1) has conservatively estimated that at some time during their lives 25% of all Americans will harbor trichina larvae in their muscles.

Viable larvae of *Trichinella spiralis* are liberated when infected pork is ingested. The larvae mature to worm adulthood early (3 to 4 days) in the small intestine. After copulation, the fertilized female discharges fully formed embryos which give rise to a new generation of larvae. These travel widely in the blood stream and then encyst in muscle fiber where they remain viable for years.

Gould and associates(2) indicate that 1.5% of all hogs slaughtered in this country are infected with the larvae of trichina and the average mortality in trichina infected people in this country is from 5 to 6%.

The symptoms and severity of trichinosis bear a direct relationship to the quantity of trichinella ingested. The symptoms of trichinosis which primarily compel the patient to see his doctor are those resulting from the invasion of the muscles by the larvae: muscle tenderness and pain, and pains in the extremities. The muscle pain may be so severe that extreme disability results with generalized muscular stiffening from spasm, and weakness. Extreme involvement of respiratory muscles, diaphragm and intercostals causes difficulty in breathing and occasionally, death.

The diagnosis of trichinosis is suggested by a history of the consumption of raw or uncooked pork and may be confirmed by muscle biopsy. The supporting evidence consists of a history of initial gastrointestinal upset characterized by diarrhea, abdominal pains, nausea accompanied by fever, fatigue, and headache — a syndrome resembling the onset of acute 'flu; pain and tenderness of skeletal muscle, are at times severe and excruciating. There may also be dysphagia; weakness, and occasionally paralysis, of extra-ocular muscles; pain on movement of

the eyes and fundal hemorrhage; periorbital edema; marked eosinophilia in the peripheral blood smear; positive trichinella skin test.

The following case record is interesting from several points of view: a fairly typical history, complaints and physical findings; the apparent failure of adrenocorticotrophic hormone and hydrocortisone to provide clinical relief and otherwise alter the progress of the disease; the addiction to narcotics required for the relief of the severe muscle pain; the value of Tubadil, a long-acting skeletal muscle relaxant, in controlling the myalgia incidental to the trichinosis and the presumptive value of this same drug in the prevention of narcotics withdrawal muscle spasms and convulsions.

CASE REPORT

The patient was a 42 year old retired marine engineer whose past history is significant in that while in the Pacific he was hospitalized on three occasions for "tropical worms". He has been seen two years previously for amebic colitis at which time systic and motile forms of *E. histolytica* were identified on proctoscopic examination.

The current illness began when the patient complained of pain in the muscles of legs, thighs, and arms during the latter part of September 1954.

A system review disclosed nausea and diarrhea of 3 days duration associated with a nocturnal temperature of 102° for two days.

The physical examination was significant in that there was moderate puffiness under the eyes without peripheral edema. The blood pressure was 135/88, however, splinter hemorrhages were noted in the conjunctivae and retinae (these eye manifestations were confirmed by an ophthalmologist). There was exquisite tenderness of the gastrocnemius, thigh muscles, deltoid, biceps, and triceps. The temperature was 101°.

The sedimentation rate by the Wintrobe method was 8-15-25-45 mm. at fifteen minute intervals. There was a white blood cell count of 10,000 with 12% eosinophiles. Skin test with

trichinella extract (Lederle) 1-10,000 was 3+ in different minutes; the control was negative. A diagnosis of acute trichinosis was made.

Upon further inquiry, it was determined that this man had visited a sausage factory one week previously where he had observed a sausage maker at work. He rather sheepishly admitted that the mixture smelled so good and the spices so fragrant that he had furtively dipped his finger into the mixture before it had been processed and ingested about one and one half ounces.

Treatment consisted of adrenocorticotropin gel, 80 units a day, hydrocortisone, 20 mgs. four times a day, and an oral salicylate compound. However, his muscular pain was so extreme that despite this medication it was necessary to give injections of dihydromorphinone (Dilaudid®), 4 mg. (1/16 gr.) as often as every two hours.

Since it was necessary to maintain the patient on this heavy narcotic schedule for three months during which time he became habituated, he was hospitalized for the purpose of withdrawing narcotics. His muscular pain was so well controlled with 1 cc. of Tubadil® intramuscularly daily that, in spite of the rather severe addiction, we were able to withdraw the dihydromorphinone slowly. By the end of the first week in hospital, he was completely free of further need for this narcotic. Chlorpromazine, 50 mg. was administered intramuscularly every six hours. There were no withdrawal symptoms and no further muscular pain. The Tubadil was given for a total of 14 days.

He was seen for a checkup one year later and his condition was found satisfactory.

COMMENTS

The diagnosis of acute trichinosis ordinarily presents little or no difficulty as in the case reported here. With respect to treatment, however, the situation is quite different. Chemotherapeutic agents with a direct larvicidal effect on trichinella in the tissues have yet to be developed. Treatment therefore has been directed primarily along supportive and symptomatic lines. ACTH and the adrenal steroids are beneficial, lessening the severity of the patient's reaction to the disease by modifying the body's defense mechanisms. While this was not en-

tirely apparent in our patient, the value of adrenocorticotropin hormone and cortisone had been reported by others(3).

The value of Tubadil for our patient lies in its having provided prolonged relief from the severe muscle pain of the myositis. The accomplishment of this type of analgesia is a function of the alkaloid, tubocurarine, which, in Tubadil, is suspended in a special menstruum. This suspension decreases the hazards accompanying the use of the aqueous forms of curare and provides prolonged relaxant effect. It is this long-lasting relaxation of muscle in spasm by Tubadil which has been shown (4-13) to be responsible for the salutary result, relief from pain.

In our patient, Tubadil appeared to offer more than the desired clinical effect, namely, alleviation of muscle pain. Its use decreased and ultimately eliminated the need for dihydromorphinone. In our opinion, Tubadil contributed significantly to the absence of symptoms of narcotics withdrawal.

We can only conjecture as to the possible useful role of Tubadil to relieve the severe pain of the acute trichinal myositis at the onset of muscle symptoms. It is possible that had we used it at the onset of muscular symptoms, we might not have had to resort to narcotics for relief of muscle pain and might thereby have lessened the likelihood of addiction.

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*TUBADIL, manufactured by Endo Laboratories Inc., Richmond Hill, N. Y., contains 25 mg. tubocurarine per cc. in a menstruum composed of peanut oil, beeswax and oxycholesterol derivatives.

THE *President's* PAGE



I attended a Christmas concert presented by the orchestra and chorus of my daughter's grammar school. With true parental pride, I sat in the audience, and beamed like the other fathers. The voices of the children were immature, but the tones that came forth were sweet and true, and the singers were angelic. The orchestral endeavors were not the polished, suave performances of a Boston Symphony, but the performers were sincere and enthusiastic. To my own usually critical ears, the music praising the wondrous birth of the Christ child and the story of the Magi was like a great choir of polyphonic music of Palestrina ascending to heaven like "cathedrals built of sound."

Why? Because my child was in that group of wonderful children, many of whom I delivered, attended their illnesses, fixed their broken limbs, and gave them immunizations. I enjoyed a warm, glowing pride for all of them.

Now, you may wonder, "Why does a doctor, — a man of science, become so emotional over the musical endeavors of a bunch of kids?" Well, — I am a father first, — then a doctor, I am also a member of my community, and am proud of these children.

My pride in the children of this community made me muse about children in other communities all over the world. They do not differ, — except possibly in color, geographic location, basic freedoms, and the amount of food their parents are able to provide for them. They are good and sweet, like my own, and just as bright and eager. They are like the bright star in the East, promising redemption, and possessing such a great potential for goodness and kindness in a troubled world that cries in the agonies of Hungary, Poland, East Germany and Korea.

Recognizing the goodness of our children strengthens, (or shall I say, stimulates) my too-often sagging resolve to be a better man and a better doctor. It prompts me to be a little kinder, to offer a little extra service, and to be less grumpy when I am called out for that night house call. I believe that I am a little more humane and gentle with my patients.

Maybe I should go to children's concerts every night!

The best to all of you in 1957.

A. I. Podolsky, M.D.

President

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Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.

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The Editor is always ready, willing, and happy to help in any way possible.

THE WORLD MEDICAL ASSOCIATION

SINCE many physicians have recently received invitations to join this organization, which is now in its ninth year, some informative comment may be apropos. The World Medical Association is a federation of the most representative national medical associations in each of fifty-two nations with these organizations representing more than 700,000 of the world's physicians, and the American Medical Association being a leading member. The association is seeking to uphold the ideals of conduct and concern for the welfare of mankind which is common to conscientious doctors of medicine wherever in the world they may be found.

It publishes a journal printed in three languages. It provides traveling physicians with introductions to their colleagues in other countries. It provides them an opportunity for meeting with their colleagues from other countries in the general assemblies held at various places in the world. Among its accomplishments are the promulgation in 1948 of the Declaration of Geneva, comprising a modern re-statement of the Hippocratic Oath, and contributing to the unity and solidarity of the profession throughout the world. In 1949 an International Code of Medical Ethics was adopted. It has striven on an international basis to counteract efforts of various nations and organizations to promote state medicine under social security programs. We find that many of the efforts which the medical profession is putting forth through the A.M.A. in our own country is being done by the World Med. Ass'n. on an international scale.

Every individual physician in the United States is eligible for membership in the United States Committee and may obtain further information by addressing the Secretary-Treasurer of the United States Committee, Dr. L. H. Bauer, at the World Medical Association, 10 Columbus Circle, New York 19, New York. In the interest of furtherance of an international understanding among the members of the medical profession, and the furtherance of aims, interests, and ideals common to and cherished by us all, we urge you to join. R.L.F.

AN INTERNIST LOOKS AT THE STATE INDUSTRIAL COMMISSION

A PHYSICIAN practicing internal medicine is little associated with the problems that arise in industrial practice. Recently decision by the State Industrial Commission to accept certain diseases in the field of internal medicine as resulting from the work of the individual, have brought the Industrial Commission into much sharper focus from the internist's viewpoint. It has been common practice to accept cases of coccidiomycosis as being related to the occupation of the individual. Recent decisions by the Industrial Commission to include myocardial infarction suffered in the pursuance of the usual occupation has been far more difficult to understand.

There are two problems that arise with the acceptance of these cases as being related or due to a man's occupation. One is that it is extremely difficult to see how they rationalize the etiology of coronary thrombosis as being due to work. Secondly, the fee that is paid to the internist for the care of such a disease as myocardial infarction is wholly inadequate and is not sufficient to pay a physician's overhead for the time spent.

Recently a colleague was involved in the treatment of such a myocardial infarction in which the entire fee for the month of hospitalization was \$65.00. It is obvious that this is a ridiculously low figure. Then to add insult to injury there are innumerable forms that must be provided to the Industrial Commission. A myocardial infarction is a serious medical illness and its proper care requires as much skill as any other procedure in the field of medicine or surgery. In looking at the schedule sheet of returns, it is easy to find several operative procedures that are compensated at the rate of \$300.00. It is not my intent to say that these procedures are not worth this figure. In fact, the fee schedule is far lower in the Industrial Commission than our like-surgical fees provided by private insurance companies.

Another point that would emphasize the ridiculous fee rate of the Industrial Commission is the fee for consultation on seriously ill patients by an internist. In the past year I have personally seen two such cases. Both have been complicated illnesses requiring much time

and thought and in each case, my compensation was \$12.50 which actually on an hourly rate is considerably less than the present plumber's code in the State of Arizona.

As one talks to his medical colleagues it is obvious that it is not only the internist that is dissatisfied with the present level of the Industrial Commission fees, but this dissatisfaction is extremely widespread in the medical profession and includes many people of the orthopedic group, general surgeons, neurosurgeons, general practitioners, etc. The difficulty in understanding the very low fee rate is that the Industrial Commission is an insurance carrier and can so adjust its fee schedule to provide adequate remuneration for the time of the physician.

It is my opinion that a serious effort should be made to overhaul the fee schedule of the Industrial Commission of Arizona to a level that will permit a return to the physician equal or slightly greater than that allowed at this time for plumbers.

E.E.Y.

A MARTYR TO SCIENCE UNDERGOES 90th OPERATION

IT IS seldom, if ever, that anyone can refer to a physician as a "hero" or as "a martyr to science."

It can be done unhesitatingly, however, in referring to Dr. Emil H. Grubbe, 81, of 1205 West Sherwin Avenue, Chicago.

He underwent his 90th operation for cancerous burns suffered more than 50 years ago when he pioneered as the world's first scientist to use x-rays for human therapy. Last week surgeons removed his nose and most of the right side of his face. Previously he had lost his left hand, his upper lip and jaw.

Dr. Grubbe was only 20 when he employed X-rays to treat a Chicago woman suffering from breast cancer. The historic event took place on January 29, 1896 at the old Hahnemann Medical College where he first taught as a physicist and later graduated as a physician. The date was only a few months after Roentgen announced the discovery of "the mysterious rays."

Dr. Grubbe's original X-ray tubes, the first ones used for therapeutic purposes, are preserved and exhibited in the Gallery of Medical History at the Smithsonian Institution.

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LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

1957 ANNUAL MEETING PRELIMINARY PROGRAM

Wednesday, April 10

- 10:00 A.M. Council Meeting
12:30 P.M. Council Luncheon
2:00 P.M. Blue Shield Annual Corporation
Meeting (House of Delegates)
6:30 P.M. Reception
8:00 P.M. Buffet Supper

Thursday, April 11

- 8:00 A.M. House of Delegates — First Session
9:30 A.M. General Session — Opening
10:00 A.M. Scientific Session:
1. Panel — "Backache"
Henry D. Brainerd, M.D. (I-Ped)
Leon Goldman, M.D. (S)
Albert G. Bower, M.D. (I)
Raymond R. Lanier, M.D. (R)
Joseph C. Risser, M.D. (Or)

2:00 P.M. Scientific Session:

1. "Present Status of Chemotherapy"
Henry D. Brainerd, M.D.
2. "The Threat of Strangulation in Acute
Intestinal Obstruction"
Leon Goldman, M.D.
3. "Roentgen Diagnosis of the Commonplace
Arthritides"
Raymond R. Lanier, M.D.
4. "Diagnosis and Treatment of the Great
Simulator, Infectious Mononucleosis"
Albert G. Bower, M.D.
5. "Management of Acute Anuria"
Joseph H. Holmes, M.D.
6. (To be announced)
Joseph C. Risser, M.D.

6:30 P.M. Reception

Friday, April 12

9:00 A.M. Scientific Session:

1. "Diagnosis of Acute Chest Pain"
Henry D. Brainerd, M.D.
2. "Jaundice"
Philip Thorek, M.D.
3. "Recent Advances in Surgery of the
Gastrointestinal Tract"
Leon Goldman, M.D.
4. "Treatment of Mumps and Its
Complications in the Adult Male"
Albert G. Bower, M.D.
5. "Office Gynecology"
N. Paul Isbell, M.D.
6. "Early Clinical Differentiation of Benign,
Pre-malignant, and Malignant Cutaneous

Neoplasms"

Donald J. McNairy, M.D.

2:00 P.M. Scientific Session:

1. "AMA and Its Stand on Accreditation"
Dwight H. Murray, M.D.
2. "Only an Appendix"
Phillip Thorek, M.D.
3. "The Diagnostic Roentgen Findings in
Study of the Acute Abdomen"
Raymond R. Lanier, M.D.
4. "Medical Management of Patients with
Recurring Renal Calculi"
Joseph H. Holmes, M.D.
5. "Examination of the Patient for
Carcinoma"
N. Paul Isbell, M.D.
6. (To be announced)
Joseph C. Risser, M.D.

6:30 P.M. Reception

8:00 P.M. President's Dinner Dance

Saturday, April 13

8:00 A.M. House of Delegates —
Second Session

9:30 A.M. Scientific Session:

1. Panel — "Post-Operative Care"
Philip Thorek, M.D. (S)
N. Paul Isbell, M.D. (ObG)
Joseph H. Holmes, M.D. (I)
Ashton B. Taylor, M.D. (Ca)

1:00 P.M. Annual Handicap Golf Tournament
SPECIALTY GROUP MEETINGS

Thursday, April 11

12:30 P.M. Arizona Pediatric Society
"Management of Infectious Diseases of the
Central Nervous System:
Henry D. Brainerd, M.D.

Friday, April 12

12:30 P.M. Arizona Academy of General
Practice

"Future of Medicine"

Dwight H. Murray, M.D.

(To be announced)

Philip Thorek, M.D.

Date Undetermined

12:30 P.M. Arizona Arthritis Association

"Treatment of the Rheumatoid Diseases" —
panel

Arizona State Society of Anesthesiologists

Arizona Chapter, American College of Chest
Physicians

Arizona Heart Association

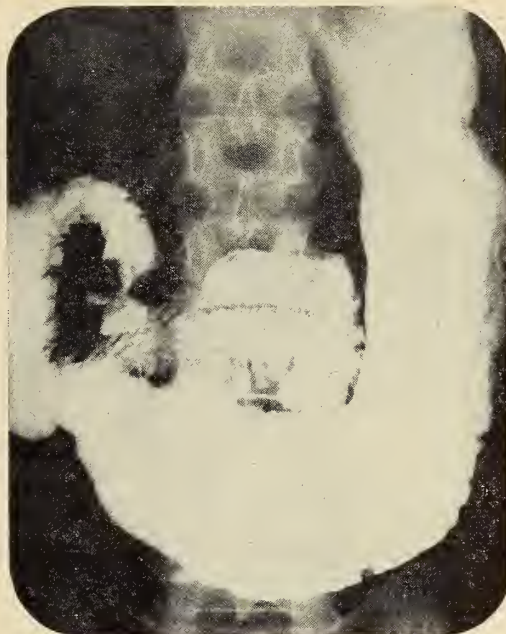
Arizona Chapter, Western Orthopaedic
Association

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*Roentgenograms courtesy of I. Richard Schwartz, M.D., Kings County Gastrointestinal Clinic, Brooklyn, N. Y.

"Roentgen Demonstration of Unusual Fractures"

Raymond R. Lanier, M.D.

Arizona Radiological Society

Arizona Chapter, American College of Surgeons

"The Injured Common Duct, Prevention and Correction"

Philip Thorek, M.D.

"Getting the Surgeon Ready for Surgery"

Leon Goldman, M.D.

cal Association, member of the Mayo Foundation Alumni Association, member of the American Academy of Dermatology, and consultant in dermatology to Williams Air Force Base Hospital.

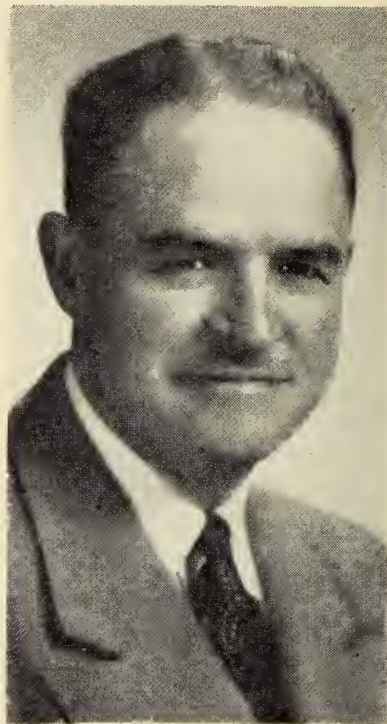
1957 ANNUAL MEETING

INTRODUCING N. Paul Isbell, M.D., Associate Clinical Professor of Obstetrics and Gynecology at the University of Colorado School of Medicine, Denver.

Doctor Isbell received his doctor of medicine degree from the University of Colorado School of Medicine in 1930. He was research associate in pathology at Harvard University School of Medicine in 1947, and has served for four years in the army air force. Currently he serves as Associate Clinical Professor of Gynecology and Obstetrics at the University of Colorado School of Medicine; Chief of Division of Gynecology and Obstetrics at Denver General Hospital Branch of the University; and is a practicing gynecologist in Denver. He is a diplomate of the American Board of Obstetrics and Gynecology, fellow of the American College of Surgeons, and fellow of the International College of Surgeons.

Introducing Donald J. McNairy, M. D., dermatologist from Phoenix, Arizona.

Doctor McNairy graduated from the University of Wisconsin and received his doctor of medicine degree from Louisville University School of Medicine in 1939. He served a fellowship in dermatology at the Mayo Clinic and was junior consultant in the Department of Dermatology at the Mayo Clinic from 1943-44. Doctor McNairy was Medical Officer in Charge of the United States Public Health Service Hospital at Charleston, West Virginia. Following two years in the armed services, he engaged in private practice in Fort Wayne, Indiana, and during the past three years in Phoenix. He is a diplomate of the American Board of Dermatology, a member of the American Medi-



N. Paul Isbell, M.D.



Donald J. McNairy, M.D.



little

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The History of Medicine in Arizona

EARLY DAY MEDICAL PRACTICE IN WILLIAMS, ARIZONA

DERMONT W. MELICK, M.D.

MY FATHER, Dr. P. A. Melick, practiced in Williams, Arizona from 1895 to 1934.

His introduction to Williams began in an unusual manner when he was accused of practicing medicine without a license. This particular circumstance occurred when he stopped to see some of his old Missouri friends (his destination was California). In the process of his visit my father was asked to examine a sick man and suggest treatment. This he did as an act of friendship rather than in the capacity of a physician. This mistake was soon brought to his attention when he was called before the local police magistrate and confronted with a complaint to the effect that he had been practicing medicine in the Territory of Arizona without a license. This action, initiated by the local physician, made my father vow that he would obtain an Arizona license and return to Williams and show the complaining doctor "who could or could not practice in Williams." Thirty-nine years later both doctors were still practicing medicine in Williams and were the best of friends.

Williams in those days was a tough little Western village. The population was small. The drinking ability was large. There were seventeen saloons in the town. The Saginaw and Manistee Lumber Company had hired a number of large, husky, raw-boned Swedes to man the hand saws used in the woods. These Swedes not infrequently imbibed excessively when they came to town. One particular night my father had to convince one of these drunken Swedes that the hospital was not a hotel. He was twice informed he could not get a room there for the night. The Swede returned a third time at two o'clock in the morning determined to "get a bed even if the doctors did insist it was a hospital." The front door was locked and he attempted to unhinge it by main force. This created a bit of noise. My father heard the commotion and immediately recognized the source as the same inebriated Swede. He decided the time had come for action instead of words. He opened the front door, gave the Swede a good solid punch between the eyes which knocked him sprawling into the street.

This convinced the Swede he was not being properly welcomed and he took off down the street at an erratic but rapid gallop. Dad was in his pajamas and bare feet, but for some reason he chased after him. In those days the trees had been cut down in the streets of Williams, but the stumps had not been removed. Dad stumbled over one of these stumps in the dark and abruptly sat down to nurse a broken toe. The Swede continued on his hasty retreat.

Transportation in Williams in the early days was usually by horse, wagon, or buggy. When any new mechanical conveyance came along my father was only too glad to abandon the horses and accept the mechanical transportation despite the fact that it was often less reliable than a horse. He bought one of the first motorcycles and used it to make his sick calls. The neighborhood dogs were often vicious and they made his rounds unpleasant because of their attempt to bite him as he rode by. He solved this situation by obtaining a small pistol grip squirt gun. A squirt of ammonia water from this gun soon diverted the dogs into other less painful pursuits.

One of the really long trips my father took as soon as he had confidence in his motorcycle was the 64 mile trip to the Grand Canyon. He made this trip around 1909. His picture was taken on the rim of the Grand Canyon. It proved to be of mild historical interest as it was the first time a motorcycle had been ridden to the Grand Canyon. The photograph was preserved and a copy is presented herewith.



Another episode had to do with a breech delivery in the home. I cannot recall why the woman was unattended by neighbors, husband or anyone else, but the event was strictly between the pregnant woman at term and her attending physician, my father. In those days it was not uncommon for women to participate in the event by self administration of ether using a heavy bi-nasal metal ether "inhaler." When the ether reached such concentration as to anesthetize the patient and cause relaxation, the heavy inhaler would automatically drop away from the patient's nose. The patient was trussed up in a proper position for delivery by using bed sheets. These were passed around the thighs and looped over the bed posts in order to accomplish flexion and abduction. With the help of this improvised sling plus the aforementioned anesthetic equipment and a kerosene lamp, the delivery was accomplished successfully.

A typhoid epidemic started at one of the lumber camps when the drinking supply became contaminated. The "bed capacity" of the small hospital in Williams at the time was ten patients. Twenty-one cases of typhoid were hospitalized. Army cots were used to supplement the shortage of beds. This called for a great deal of attention on the part of both my father and mother. The food item may not have been important in view of the prevailing therapy for typhoid, but the ordinary "nursing" care in such cramped quarters presented a problem. I vaguely remember receiving the usual routine typhoid shots. They were received with a lack of appreciation.

One particularly interesting case my father liked to describe was of a severe necrotizing infection of the anterior one-half of the thorax. The skin and subcutaneous tissue sloughed away leaving a very large raw surface. The only grafting that my father knew about was pinch grafting. He believed this enormous area demanded a covering in a more rapid manner. To do this he used "skins" removed from boiled eggs and applied them over the raw surface. Pinch grafts were interspersed between these "skins." The patient recovered. This unique method did not find favor with my economically minded mother as she found her larder in an over supply of hard boiled eggs.

A doctor's wife must have a sympathetic ear and a quiet tongue. It would be remiss to

describe any experiences in my father's practice in the early days of northern Arizona without paying tribute to my mother. She was a school teacher before marriage and had accumulated \$1200. This nest egg was used to help finance the building of the Williams Hospital in 1898. During the forty years the Williams Hospital was in existence, the greater portion of the menial work that kept the hospital "in working order" rested squarely on her shoulders. She worked long hard hours at many tasks. She was "chief cook and bottle washer." She was secretary and nurse. She lived the adage "woman's work is never done." My father worshiped her with a rare devotion that in retrospect adds luster and a deep sense of contentment to the visual images that arise in the recounting of these past episodes.

On one particular occasion, my father was involved in a wreck, his car being struck by a railroad train, which resulted in a basal skull fracture and a fracture of the right clavicle. His condition was critical and the physician in attendance at that time, Dr. C. D. Jeffries, decided consultation was necessary. My father had great admiration for Dr. E. Payne Palmer, Sr., and Dr. Jeffries asked him to come from Phoenix to Williams in consultation. My father made a slow recovery. He eventually became aware of the fact that Dr. Palmer had seen him in consultation. He sent him a check for \$150. Dr. Palmer immediately returned the check with a little note to the effect that such financial obligations between medical colleagues was unheard of and he would not accept the check. My father again sent the check to Dr. Palmer. How many times this check was exchanged between Phoenix and Williams, Williams and Phoenix, I cannot say, but I believe it became so "dog-eared" that Dr. Palmer finally put an end to it by tearing it up and throwing it in the wastebasket.

One stormy Christmas Eve a call was received from Anita, Arizona, (40 miles north on the Williams-Grand Canyon Highway). An anxious mother made the request that my father come to Anita as soon as humanly possible in order to see her very sick child. An unusually heavy snow had fallen and the road to Anita was hazardous. The choice was to go by automobile or by a "speeder" belonging to the Santa Fe Railroad. The "speeder" had no protection from the weather and any forty

mile trip on such a conveyance was impossible in cold weather unless one happened to have the resistance of a polar bear. At eight o'clock on this Christmas Eve the trip was undertaken by auto. At the last minute my mother decided to accompany my father. Four hours later at a point five miles from Anita, the car stopped for no apparent reason. The question then arose whether to stay with the car or attempt to walk to Anita. Dad decided they should go on to Anita. It was then found that my mother had forgotten to put on her galoshes in the rush of her last minute decision to accompany my father on this "call." Dad gave her his galoshes. They were much too big and so cumbersome that walking was difficult. They walked one-half mile across country in deep snow to the railroad and then for five miles along the railroad to the Anita Section Station. It would be a dramatic conclusion to state that he arrived at the Section House just in time to save the child's life, but this is far from the fact. Between the time of the original telephone call and the arrival at the Anita Station House, the child had completely recovered from its "serious illness" and the need for medical services were no longer apparent. A touch of ironic comedy could have been added to the situation if the mother had opened the door when my father and mother arrived and said, "Everything is all right now Doctor, we don't need you." My mother in commenting about this experience did not minimize the danger of the long hard walk in the snow, but she seemed to be critical of the actions of my father. She stated, "walking in those oversize galoshes was had enough but on top of that your father tried to be funny. Every so often he would get out in front of me and say climb on my back Cora and I will carry you."

As far as my impressions with regard to my father as a doctor are concerned, it is now apparent to me that he possessed the ideal bedside manner so often ascribed to the family physician. I still vividly recall the deep sense of relief I experienced whenever he entered my sick room. It was characteristic of him to come to the bedside and gently grasp my wrist to feel the pulse and at the same time extract a large pocket watch in order to determine the rate. If there is anything to the old adage about healing by the "laying on of hands" this memory makes me believe such a thing is possible.

SCIENTIFIC MEETING OF THE AMERICAN HEART ASSOCIATION Cincinnati, Ohio (October 1956)

By Wm. Butcher, M.D.

ANOTHER experimental approach to the problem of myocardial ischemia — direct anastomosis of an extracardiac vessel to the coronary artery (dogs) distal to the point of occlusion. Also a slightly different technic for implanting a capillary bed into the myocardium using intercostal muscle bundles containing artery, vein, and nerve (Thal).

More statistics of internal mammary artery transplantation — 85 patients with coronary artery insufficiency were reported to be relieved of anginal pain after internal mammary artery transplantation into the wall of the left ventricle. Surgical mortality of patients with no angina at rest was 3-6%; with angina decubitus, 45-50% mortality. Good results in 75% of cases with no angina at rest and in 21% of cases with angina decubitus. (Vineberg & Walker)

Surgical removal of a ventricular aneurysm has been successfully performed in 6 of 7 cases. In 5 patients the aneurysm developed from 4-12 months after an extensive anterolateral or posterolateral myocardial infarction. In 2 patients it followed direct trauma to the left ventricle. When secondary to myocardial infarction, congestive heart failure and paroxysmal arrhythmias were the major clinical problem. — An excisional procedure was used in each patient. Six of the patients recovered after surgery, and in these, compensation was restored, gallop rhythm corrected, and paroxysmal arrhythmias arrested. (Likoff & Bailey)

Beck and his followers continue to advocate the Beck operation or operations based upon the principles of the Beck operation for the development of intercoronary arterial communications by the heart as the result of various stimuli such as partial carotid sinus ligation, mechanical abrasion of the pericardium and epicardial surface of the heart, the application of 0.2 Gm. powdered asbestos. They claim reduction of pain and improved exercise tolerance in 9 out of 10 patients and increase in life expectancy.

Acetylcholine has been used to induce cardiac arrest during open heart surgery (pump-oxygenator system), thereby increasing the ease of correction of intracardiac defects. The hearts were easily restarted by perfusing the aorta and coronary arteries (Lam).

Calcium gluconate in dosage of 1 Gm. intravenously was shown to have a rapid and striking effect in augmenting the force of contraction of the failing heart. Calcium gluconate was successfully administered as the sole therapeutic agent in 7 consecutive patients with severe acute pulmonary edema due to hypertensive heart disease and acute myocardial infarction. Since the action of the calcium gluconate was brief, digitalis was administered immediately after relief was obtained, to maintain cardiac compensation. (Gubner and Kallman)

Electrocardiograms, preoperative and postoperative, of patients 45 years of age or older, are helpful in detecting postoperative myocardial infarction, because the clinical course is frequently atypical and may go unrecognized. (Kahn & Calabresi)

Lipoprotein (S-f 12-20 and S-f 20-100) measurements were NOT found to have the unique diagnostic value which has been claimed for them. The level of serum cholesterol was a somewhat better index of the presence of coronary artery disease than were either of the lipoprotein measures. (Mann)

Hot and humid environment was shown to be a strong stimulant to cardiac output, stroke volume, and work, both in normals and in patients with congestive heart failure even at rest. (Burch & Hyman)

Data was presented to indicate that in dogs with coronary arterial narrowing, exercise is a significant stimulus to collateral growth. (Eckstein)

A method for measuring oxygen tension of tissues in vivo was described. The method has the advantage of a fine-pointed electrode that can be inserted into the tissue; the flow of electric current is proportional to the rate of delivery of oxygen from the tissue to the electrode. (Montgomery)

Left heart catheterization was reported by several groups of investigators to be helpful in the evaluation of aortic and mitral stenosis. Simultaneous left and right heart catheterization studies were said to permit identification of the cause of existing pulmonary hypertension (i.e., left ventricular failure, or mitral stenosis with block, or increased pulmonary vascular resistance).

The Lewis A. Conner Memorial Lecture was given by Dr. Jesse Edwards, pathologist. He discussed at great length the role of the pul-

monary vascular tree in congenital cardiac disease. A summary of his remarks follow.

In the presence of a free communication between the ventricles or great arteries, and of pulmonary stenosis also, the structure of the pulmonary vascular bed is essentially normal and its functional response is evidently normal. However, if there is no pulmonary stenosis, thick muscular medial coats in the small pulmonary arteries are present. This condition correlates with the functional feature of a high resistance to pulmonary flow. The high resistance is a governing factor in the direction and magnitude of shunts across the abnormal communication. Pulmonary hypertension is an associated condition.

Obstruction to pulmonary venous flow likewise results in hypertrophy of the medial coats of the small pulmonary arteries and a high arteriolar resistance to flow. Pulmonary arterial hypertension may develop.

Simple muscular medial thickening seems to be associated with a readily changeable response on the part of the pulmonary vascular bed. In time the associated pulmonary hypertension may be complicated by intimal lesions that cause anatomic occlusion of lumens. This condition is followed not only by an intensification of the high degree of pulmonary vascular resistance but also by loss in the flexibility of response. (finis)

In other papers, these observations of Dr. Edwards assumed particular significance in relation to the mortality rate of surgical repair of ventricular septal defects:

In the presence of a pulmonary artery pressure greater than 70% of the aortic pressure, the mortality rate was about 55%, in contrast to a mortality rate of less than 10% if the pulmonary artery pressure was less than 70% of the aortic pressure (University of Minnesota). The suggestion was made that in patients showing nearly balanced pulmonary artery and systemic pressures, lung biopsy might be considered as a preliminary procedure which is justified to avoid major surgery with little hope of survival. No patients survived surgery whose lung biopsy specimens showed 5 or more vessels with intimal proliferation per cm.² In those patients whose biopsy specimens showed 3 to 5 vessels with intimal proliferations per cm.², only half survived surgical closure of the

ventricular septal defect. (University of Minnesota)

DuShane & Kirklin (The Mayo Clinic), however, reported somewhat different criteria for selection of symptomatic patients with ventricular septal defects for surgical repair. Operation was recommended for those patients having increased pulmonary flow in spite of the degree of pulmonary hypertension or the presence of a right-to-left shunt. If the pulmonary flow was less than the systemic, surgical intervention was not recommended. Thus, selection of candidates for operation depended on proper assessment of the dominant intracardiac shunt. Criteria of importance are cardiac hyperactivity, X-ray signs of increased pulmonary blood flow, electrocardiographic evidence of increased left ventricular work, and the determination of intracardiac hemodynamics by cardiac catheterization, studies of arterial oxygen saturation and dye-dilution curves.

CRASH RESEARCH

THE ARIZONA State Committee on Trauma of the American College of Surgeons, with the cooperation of the Greater Tucson Safety Council, arranged for the showing of two films to Tucson High School students registered for the Driver Training program. These films are "The Search," put out by CBS, and "Crash Research," produced by the Ford Motor Company. H. P. Limbacher, M.D., 116 No. Tucson Blvd., Tucson, can obtain these excellent films for showing elsewhere.

NEWS NOTICE

ON NOVEMBER 14 and 15 the Arizona State Medical Association representatives met with the Army representatives of the Defense Department in Washington to negotiate the contract for operation of Medicare in Arizona.

Association members attending were A. I. Podolsky, President, F. W. Edel, Chairman Medicare Committee, Paul Jarrett, Member Medicare Committee, along with Robert Carpenter, Executive Secretary and Edward Jacobson, Association Attorney and L. Donald Lau, Executive Director of Blue Shield, the fiscal agent.

Book REVIEWS

THE PERSON BEHIND THE DISEASE by Julius Bauer, M.D. 136 pages. (1956) Grune & Stratton. \$3.50.

In an unusual monograph Dr. Bauer discusses the art of treating the patients rather than the diseases. From more than 40 years of clinical experience, he discusses consideration of the genetic, constitutional, and psychologic makeups of patients relative to their medical problems. The author is a Clinical Professor of Medicine, College of Medical Evangelists.

Stacey's Medical Books, San Francisco

HANDBOOK OF MEDICAL TREATMENT by Milton J. Chatton, M.D., Sheldon Margen, M.D., and Henry Brainerd, M.D. 5th ed. 571 pages. (1956) Lange. \$3.

Readers of these reviews will have noted that no volume is tagged a "must" book. Here, however, is one that every practicing physician ought to have in his bag, a wonderful compendium of concise and useful information. It would be a bargain at twice its price.

Stacey's Medical Books, San Francisco

CLINICAL HEMATOLOGY by Maxwell W. Wintrobe, M.D. 4th ed. 1184 pages. Illustrated. (1956) Lea & Febiger. \$15.

Advances have been made in so many areas of hematology within the past few years that Dr. Wintrobe has found it necessary to add to, rewrite, and revise in all divisions of the text. New chapters have been added on blood groups and blood transfusion, and on the abnormal hemoglobin syndromes. Chapters or sections which have been rewritten include those on the production and destruction of red corpuscles, coagulation, hemolytic anemias and hemorrhagic disorders. Many other chapters have had extensive revision. There are 23 new helpful tables, numerous new illustrations and 1600 new references. To quote the Journal of the A.M.A., "The best . . . retains the preeminence established by its predecessors and remains the best available book for both hematologists and internists." (January 12, 1952:156 from a review of the previous edition).

Stacey's Medical Books, San Francisco

(Continued on Page 38)

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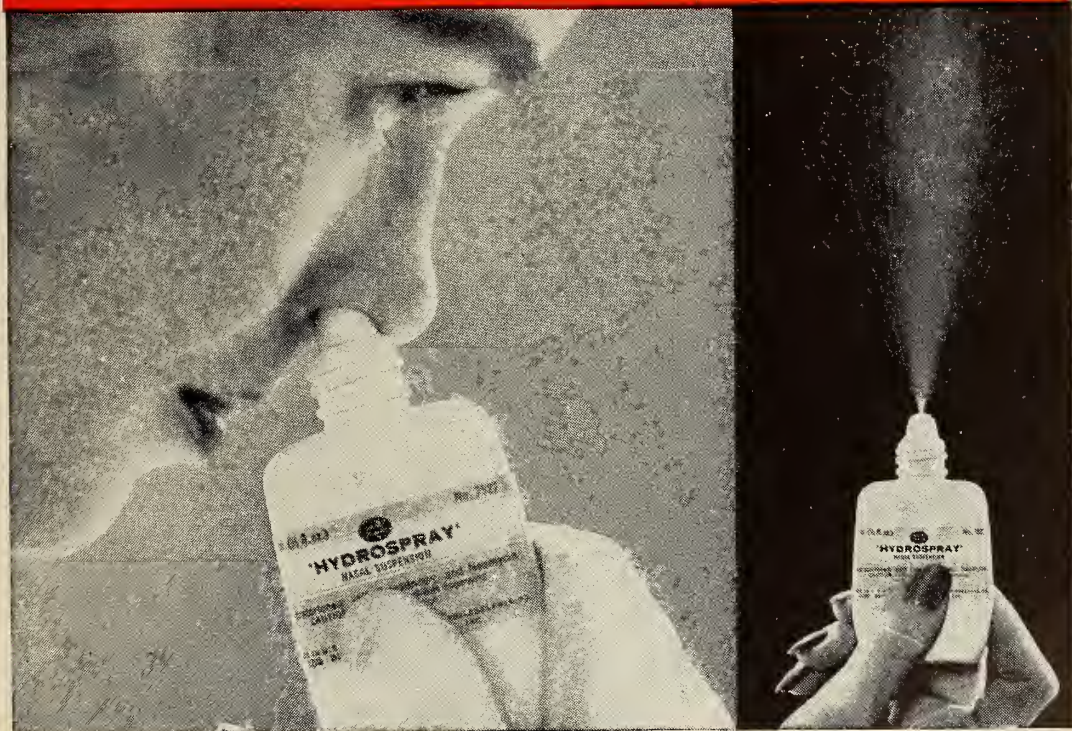
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TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By GUILLERMO OSLER, M.D.

A DRAMATIC use of a hydrocortisone ointment has been described in the Archives of Industrial Health (A.M.A.) 'Neo-Cortef' has been applied to swollen and bruised fingers for relief of pain and to prevent inflammation. . . . It is said that the effects begin in **two minutes**, and the swelling is markedly reduced in 6 to 48 hours. . . . The authors (McLaughlin and Schector) should know about such injuries, since $\frac{3}{4}$ of the 38,000 calls per year in their first-aid station are for finger and hand injuries. . . . We intend to try it, and we suspect it may also be of value in burns, tho we have not seen such a report.

* * *

Each of us physicians/citizens must be embarrassed to read the following — "CIVIL DEFENSE strategy is in for a major overhauling." Etc. . . . If there is a possible need for civil defense (as there surely is) there should be preparations and precautions. They shouldn't be voluntary, and partial, and possibly ineffective; they should be universal and regular and certain. . . . The medical angles should be updated and prepared, just like all the other aspects. Then we may be less embarrassed at a future time.

* * *

There are many people who knew **Dr. Vivian Tappan** during the years when she was a noted pediatrician in Tucson. She spent many of her summers directing the pediatric out-patient service at Johns Hopkins. Many of her patients in Tucson were referred by famous eastern physicians. She would make no compromise with inefficiency, expediency, or expense. . . . It is good to hear that she is back in a practicing position. She is now assistant director of pediatrics at Yale, the head of a new cystic fibrosis clinic.

* * *

We should give a loud "Ole!" for two different medical treats. First, the notice that **BLUE SHIELD** will provide extra benefits is good news. . . . Second, the 'HISTORY OF MEDICINE' section in **ARIZONA MEDICINE** is a very good idea. Several journals have such a section. Arizona's medical history is so recent, comparatively, that it can be readily found by the historians, and lots of it from first-hand sources. We have a fine chance to know about our heroes, our average predecessors, and even our scoundrels. The last-named did some rootin', and even some shootin'.

* * *

Where was the Land of the Lotus Eaters? Was it in the northeast Mediterranean? Is it a village near Phoenix? Or is it the patients who take the Winthrop Lab's new butylbarbiturate, called

'Lotusate'? . . . They hit the jackpot on that name, no matter how well the drug works (and it is said to be of value as a sedative, or in larger doses, as a hypnotic).

* * *

A couple of years ago we mentioned the startling number of **GRADUATES OF FOREIGN MEDICAL SCHOOLS** who were licensed to practice medicine and surgery in Ohio. . . . Again we have seen the list in the *Ohio State Medical Journal* and again it is amazing. Seventy-two of the list of 392 were graduated from schools in just about every foreign country. . . . Ohio must really be able to integrate, tho one would suspect an occasional attack of social indigestion.

* * *

Dr. Alvarez wrestles with the problem of **asthma and climate**. He balances pollens, dryness, heat, wind, distance, livelihood, et al., and comes up with the conclusion that in some people, after a trial, and with the advice of a good allergist, sometimes 'yes'. . . . Perhaps he would write a more strongly favorable article during a Chicago midwinter day, with sleet underfoot, no sun overhead, the steam-heat drying out a respiratory tract loaded with the results of a 'cold' and house-dust, and barely over the effects of fall hay-fever. . . . The balance then would tip southwestwards, and by airplane.

* * *

CHEMOTHERAPY FOR TUBERCULOSIS is still not uniform down at the 'grass roots', which means me and you. . . . The V.A. and Trudeau meetings provide huge analyses, and some fairly definite conclusions on use of the drugs, a couple of times per year. There is some leeway, and some equality in various regimens, so that we all have a choice. . . . A 'show of hands' at a recent California Sanatorium meeting indicated that one third of the specialists present used streptomycin, another third dihydrostreptomycin, and the remainder used both. About two thirds used a 'dual drug' therapy (INH & PAS) for cases which had become inactive by x-ray and bacterial tests, and one third continued to use the 'triple drug' routine (including SM).

* * *

Do you feel 67? One hundred? **A hundred and sixty seven?** . . . Javier Pereira feels just fine, and the physicians at New York Hospital say he is in good condition. They also believe that he probably is 167 years of age, tho there is no certain way to tell the exact age of an adult. . . . We can't all be that old, but we can **feel** that way once in a while.

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It is good to see quotations from ARIZONA MEDICINE in another medical journal. A recent article by Dr. James Waring (on the treatment and CARE OF THE LONG-LIVED TB patient) has been quoted at length in GERIATRICS, which confirms a recent comment here that it is a solid and modish publication.

The same issue of that journal has an editorial by J. P. Warbasse of Woods Hole, Mass., on 'The Ultimate Adventure'. It is worth reading in toto, but a few excerpts will do for now — THE AGED NEED TO KNOW HOW TO DIE, to approach the great adventure with poise if not satisfaction. . . . The aged person should not have to ignore or turn away from the event as tho it were shameful or a subject for taboo. He should be free of discomforts — that is his doctor's duty. Then, there remains for him something to be found . . . there is the satisfaction of equanimity. . . . The sense of humor and spirit of waggy need not vanish too soon. . . . The person who has not feared life need not fear death. The intelligent do not fear sleep, but welcome it as a necessary oblivion at the end of the day. (The fear of death is a fantasy. Medieval artists pictured death as an excruciating fate. Religious believers and non-believers may approach the end with peace and assurance if they have reached a firm intelligent philosophical conviction.

* * *

Here we are with the 'shotgun' again — 1. 'Citra' (by Boyle & Co.) contains a decongestant, an antihistaminic, an analgesic, an antipyretic, an expectorant, and an agent to restore capillary function. . . . 2. 'Achrocidin' (by Lederle Labr.) is made up of the broad-spectrum antibiotic achromycin, an analgesic, an antipyretic, and an antihistamine. . . . We will soon be right back to the bulky prescriptions of 50 or 100 years ago, except that we have to remember only one name, and except that fewer of the ingredients are

useless or inert.

* * *

California has a law which FORBIDS COMMISSION of persons with "harmless chronic mental unsoundness" to a State Hospital. Yet most of the state, except Los Angeles County, does so; there is no other way of caring for them, so the jurists break the law. . . . The amazing result is that one-third are dead within a year, and half of that group dies in the first 45 days. The newspapers report that this is not due to neglect, but to "a final shock to the tired old hearts of the elderly". It COULD simply be that they are not committed until that ill.

* * *

Detection of the sex of an unborn child may be possible some day, but **determination of the sex in adult cells** is already possible. Barr and his colleagues have maintained that 'maleness' and 'femaleness' are transmitted by the fertilized ovum to the somatic cells. The cells of most tissues show the sex chromatin, and it is peculiarly present in female cells. The neutrophils of the blood and the cells of the skin are very good indicators, and very convenient for sampling. . . . This should be of value in deciding the sex of an hermaphrodite, and is. It has also been shown that cancer cells are the same sex as the patient.

* * *

Dr. Marcus Crahan, a long-time medico-legal expert in Los Angeles, says the following sad quote — "The highways leading to SKID ROW'S dead-end street are poorly marked. There are no brake-testing stations except those of the courts — way down near the journey's end". . . . Along the same alcoholic line is the re-quote of Dr. Karl Bowman of San Francisco — "An alcoholic is hard to define. One might say that he is a person who cannot get along without alcohol, or with it".

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TUBERCULOSIS LAWS AND REGULATIONS OPINION NO. 56-103

REQUESTED BY: Arizona State Department of Health.

OPINION BY: ROBERT MORRISON, The Attorney General; H. B. Daniels, Assistant Attorney General.

QUESTION: In the enforcement of quarantine laws and regulations, particularly in regard to tuberculosis:

1. What is the responsibility of the health officer?

2. What is the responsibility of the county attorney and the courts?

3. What is the responsibility of the law enforcement officers?

4. How may the duties of these agencies be correlated to secure speedy, effective action in handling of tuberculosis cases?

CONCLUSION: 1. The health officer, particularly the tuberculosis control officer, is responsible for the enforcement of the quarantine laws.

2. (a) The county attorney is responsible for the prosecution of those who commit public offenses and the institution of proceedings before the magistrate for the arrest of the persons charged or suspected of public offenses when he has facts showing the offenses have been committed.

(b) The court has the duty of determining and imposing sentence according to the punishment prescribed by law.

3. It is the duty and responsibility of the sheriff to preserve the peace, arrest and take before a magistrate all persons who attempt or have committed public offenses and to prevent breaches of the peace.

4. All three agencies should co-operate when a patient has been arrested for violation of the quarantine measures to detain and isolate such person or persons until such time as it has been determined that he is no longer a hazard or dangerous to the public's health and safety.

The answer to the questions asked must be found within the statutes. The hereinafter quoted sections of the Arizona Revised Statute are cited for convenience:

Sec. 36-624. Quarantine and sanitary measures to prevent contagion

"When a local board of health or health department is appraised that infectious or con-

tagious disease exists within its jurisdiction, it shall immediately make an investigation. If such disease does exist, the board or department shall adopt quarantine and sanitary measures to prevent spread of the disease. The board or department may immediately cause a person afflicted with such disease to be removed to a separate house if in the opinion of the health officer, county superintendent of public health or director of the local health department, the person can be moved without danger to his health. If the person cannot be moved, the board or department shall make quarantine regulations and may cause the removal of persons in the neighborhood. The local board or health department shall immediately notify the state department of health of the existence and nature of the disease, and measures taken concerning it."

This section plainly imposes a duty upon the local health officer to see that an individual is isolated, if such person is infected with a contagious or infectious disease. Regarding the isolation of persons infected with tuberculosis, the Legislature has said:

Sec. 36-713. Declaration of policy

"A. It is the policy of the state to treat persons having tuberculosis in a communicable and contagious stage as dangerous to the health and welfare of the citizens of the state. It is also the policy of the state to declare that all cases of tuberculosis in a communicable or contagious stage should be isolated in an approved hospital, institution or nursing home, or at home if such home isolation meets the approval of the health officer and the tuberculosis control officer. To this end, it is declared that quarantine provisions to achieve isolation of such communicable or contagious tuberculous persons should be accomplished to the fullest extent regardless of such person's ability to pay. It is further declared that such persons with communicable or contagious tuberculosis shall be given full opportunity to enter isolation voluntarily. In order to prevent effectively the spread of this disease it is necessary that the state:

"1. Further the discovery, care supervision and treatment of persons having tuberculosis in a communicable or contagious stage.

"2. Encourage the use of all available public

and private facilities to that end.

"3. Regard this tuberculosis program as one of public health and one to be dealt with according to public health requirements rather than those of indigency."

In addition to the above quoted section, the Legislature provides as follows:

"A.R.S. Sec. 36-713 B. Tuberculosis is declared to be a communicable and contagious disease within the contemplation of the quarantine laws of the state only where such tuberculosis is in a communicable or contagious stage."

Clearly, the Legislature intended that the quarantine laws should apply to persons infected with tuberculosis in a contagious or communicable stage.

The Legislature, in Section 36-714, specifically made the tuberculosis officer responsible for the isolation of tuberculous persons.

For violation of a quarantine order or regulation the individual is liable criminally. A.R.S. Sec. 36-631 provides as follows:

"Sec. 36-631. Person with contagious or infectious disease exposing himself to public; penalty; exception

"A person who wilfully exposes himself to another afflicted with a contagious or infectious disease in a public place or throughfare, except in the necessary removal of such person in a manner least dangerous to the public health, is guilty of a misdemeanor."

Whenever a person commits this public offense, it is the duty of those in possession of such fact to convey that information to the county attorney. The county attorney has the duty then to institute proceedings before a magistrate for the arrest of such person charged with or suspected of such offense. See A.R.S. Sec. 11-532. It is further the duty of the county attorney to prosecute in behalf of the state the violator of such public offense.

The court has the responsibility of determining the guilt or innocence of the accused upon the law and the evidence submitted to it. The court shall determine and impose sentence according to punishment prescribed by law. A.R.S. Sec. 13-1642. When the punishment for a misdemeanor is not prescribed by law, the court may impose a jail sentence not to exceed six months, a fine not to exceed \$300.00, or both. A.R.S. Sec. 13-1645.

The sheriff is responsible for the arrest of

persons who attempt or have committed a public offense. This agency also has the responsibility of preventing breaches of the peace and generally preserving the peace. The sheriff also has the responsibility, after making an arrest, to bring the arrestee before the nearest magistrate in the county and to retain such prisoner in his custody until lawfully released. A.R.S. Sec. 11-441.

The Legislature has declared it to be a policy of this state that all cases of tuberculosis in a communicable or contagious stage **should be isolated**. It also declares that such persons with communicable or contagious tuberculosis should be given full opportunity to enter isolation voluntarily. It seems to us, that in order to make this policy effective, all of the several agencies must cooperate to protect the public health. It is apparent that there is no clear procedure provided for the handling of such patients. However, it appears to us that when the individual violates the quarantine law he has committed a public offense and that the county attorney should inform against such person and the sheriff should bring him immediately before a magistrate. The magistrate should make every attempt to detain the individual and assist in isolating him. We believe this to be the intent of the Legislature. Any other conclusion would make the provision of the Tuberculosis Control Act a nullity. If the individual who is being detained feels that his detention is wrongful, his remedy is by habeas corpus. This is the speediest method that we can suggest under the present status of the law.

ROBERT MORRISON

The Attorney General

H. B. DANIELS

Assistant Attorney General

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(Continued from Page 30)

PRACTICAL OFFICE GYNECOLOGY by Albert Decker, M.D., and Wayne H. Decker, M.D. 388 pages. 103 illustrations. (1956) Davis. \$10.50.

Practical and workable methods for diagnosis, management, and treatment are presented, backed by basic clinical gynecologic principles. This makes a good refresher course for practicing physicians.

Stacey's Medical Books, San Francisco

HANDBOOK OF PEDIATRIC MEDICAL EMERGENCIES by Adolph G. DeSanctis, M.D. 2nd ed. 389 pages. 73 illustrations. (1956) Mosby. \$6.25.

Chapters on metabolic emergencies, accident and poison prevention, genitourinary emergencies, and respiratory paralysis in poliomyelitis are new. Additions have been made to the list of household poisons. Considerable revising has been done. Although references are made to procedures used in other hospitals, the text presents those of the New York University-Bellevue Medical Center.

Stacey's Medical Books, San Francisco

THE PATHOLOGY AND SURGERY OF THE VEINS OF THE LOWER LIMB by Harold Dodd and Frank B. Cockett. 462 pages. Illustrated (1956) Williams & Wilkins. \$12.50.

R. R. Linton, M.D., in the foreword of this book says, "It is a pleasure to write this foreword for what is believed to be the best book available on this subject. The publication of it at this time certainly fills a definite need, and it is hoped that many surgeons now attempting this type of surgery will read it and digest its words with great care. The explanation of the pathological physiology of the various disorders are fundamental and lucid in all details. The surgical measures to correct them are carefully explained. The only criticism, perhaps, of the book is the fact that some of the methods described are not sufficiently radical to produce the best results, and it is predicted that in the next edition, especially in the handling of the chronic ulcers of the lower leg, a still more radical approach will be described, in order to interrupt additional communicating veins, than those described in the text."

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HEAD INJURIES AND THEIR MANAGEMENT by Francis Asbury Echlin, M.D. 127 pages. (1956) Lippincott. \$3.

Of the many good monographs on brain injuries, most of them are too voluminous and appeal to the specialist. Here is a pocket book for practitioners, a welcome short summary of how to manage head injuries and to deal with both surgical and nonsurgical cases and complications. Special aids in diagnosis are considered. A short bibliography is included.

Stacey's Medical Books, San Francisco

DISEASES OF THE BREAST by C. D. Hagensen, M.D. 751 pages. 429 illustrations. (1956) Saunders. \$16.

Diagnostic methods, given detail, include dis-

cussions of medical history, palpation, retraction signs of nipple and areola, biopsy methods, and smears of discharges. Medical and surgical treatment is explained and illustrated for cancer of the breast, benign tumors, cystic disease, adenosis, fibrosis disease, mammary duct ectasia, and adenofibroma. The author's own effective technique for radical mastectomy is described point by point.

Stacey's Medical Books, San Francisco

FRACTURES, DISLOCATIONS AND SPRAINS by J. Albert Key, M.D., and H. Earle Conwell, M.D. 6th ed. 1168 pages. Illustrated. (1956) Mosby. \$20.

For nearly a quarter of a century this text has been an American standard for care of trauma of bone and joint. The present edition maintains the previously high degree of care in preparation. Modernized by both deletions and additions, selected methods are clearly and adequately described.

Stacey's Medical Books, San Francisco

MEDICAL EFFECTS OF THE ATOMIC BOMB IN JAPAN edited by Ashley W. Oughterson, M.D., and Shields Warren, M.D. 477 pages. Illustrated. (1956) McGraw-Hill. \$8.

Among the subjects discussed are: the simultaneous effects of the blast, heat, and ionizing radiation; and the factors influencing the catastrophe, such as surprise attack, terrain, layout of the cities, distance, shielding, density and distribution of the population, and the effects of medical care and facilities. Anatomic and histologic notes, case histories, and laboratory examinations are summarized, and the available clinical data on patients examined at autopsy are given for each group and subgroup.

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PHYSICAL MEASURES IN THE TREATMENT OF POLIO-MYELITIS by R. J. S. Reynolds. 140 pages. Illustrated. (1956) Macmillan. \$2.50.

Salk vaccine may be lowering the incidence of paralytic poliomyelitis, but such cases will probably always be with us. The fewer the patients the more need is there for attention to alleviation. This small English handbook gives directions for physiotherapeutic measures at all stages. It is derived from the files of one of England's largest hospitals caring for infantile paralysis.

Stacey's Medical Books, San Francisco

DIABETES MELLITUS: Handbook for Physicians by Howard F. Root, M.D., and Priscilla White, M.D. 346 pages. (1956) Blakiston-McGraw. \$7.

This handbook relates diabetes mellitus to general medicine, including obstetrics, pediatrics, and surgery. Diabetic complications discussed include cardiovascular, renal, pulmonary, and ocular disorders associated with imperfect control of the disease. A discussion of the basic concepts stresses particularly the long-range objectives in treatment and the importance of adequate control of diabetes from its onset.

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MEDICARE Public Law 569

BRIEFLY, the Chairman wishes to report that he first became acquainted with Public Law 569 on August 26, 1956 at a meeting in Denver, Colorado of regional western states pertaining to Medicare (Medical Care for Dependents of Active Uniformed Personnel of the United States Armed Forces, United States Geodetic Survey and United States Public Health Services).

After a thorough study at this Denver meeting which was attended by all the western states, a special Council meeting was held on September 23, 1956, at which time the Medicare Committee was established consisting of yours truly as Chairman, and Doctors Ernest A. Born, Carlos C. Craig, Hugh E. Dierker, John A. Eisenbeiss, Francis M. Findlay, George O. Hartman, Robert E. Hastings, Benjamin Herzberg, Walter T. Hileman, Paul B. Jarrett, Elvie B. Jolley, Harry B. Lehmberg, Donald E. Nelson, Royal W. Rudolph, Stuart Sanger, Paul L. Singer, William B. Steen, Oscar W. Thoeny, Otto E. Utzinger, Vice Chairman, Charles E. Van Epps, James Volpe, Jr., and MacDonald Wood.

This special committee convened on Sunday, October 7, 1956, and a tentative fee schedule was set up and presented at a special Council meeting which was called on October 28, 1956. At this Council meeting, it was directed that Doctor A. I. Podolsky, President of the Association, Doctor Paul B. Jarrett, member of the Medical Economics Committee, Doctor Frank W. Edel, Chairman of the Medicare Committee, Mr. Robert Carpenter, Executive Secretary of the Association, and Mr. Edward Jacobson, attorney, legal counsel for the Arizona Medical Association, make the trip to Washington, D. C. on November 14, 1956 to negotiate, if possible, the contract for the Arizona Medical Association with the executive agent, namely the Department of the Army, for the medicare program. We were accompanied by Mr. L. Donald Lau, Executive Director, Arizona Blue Cross-Blue Shield. The Arizona Blue Shield had been previously designated at the first special Council meeting as Arizona's fiscal agent for this program.

I wish to review briefly this plan as it pertains only to the civilian medical care program, that is, the private doctor and his relationship to

the Medicare program in the State of Arizona. Briefly this is a service plan contracted between the Arizona Medical Association and the United States of America, Department of the Army as executive agent. Arizona Blue Shield is the fiscal agent, but we wish to emphasize that this has nothing to do with the present Arizona Blue Shield plan. We were successful in negotiating what your committee feels to be a very fair contract to all concerned. We may also re-emphasize that this is a renegotiable contract by either party on an annual basis beginning July 1, 1957 if we find that either party is being damaged in any way by the existing contract.

Those eligible for care by civilian doctors are (1) the immediate spouse, and (2) the dependent children. This is essentially an "in-hospital program". There are no provisions as yet for out-patient care, except for (a) fractures, (b) other traumatic injuries, lacerations, etc., and (c) prenatal and post-natal care. Study is going on at present, however, to see if in the future out-patient care may be included. This is still nebulous and very indefinite at present, however. It is the physician's responsibility to use reasonable means to be sure that those he cares for are eligible under the act. After July 1, 1957 identification cards will be given to all eligible families which will serve as a definite means of identification; however, in acute emergencies this provision may be waived at any time.

Fee schedules have been established which the Medicare Committee feels are quite fair to all concerned. These are obviously too lengthy to print in the Journal; however, a copy of this schedule will be mailed to all members of the Association by the Blue Shield in the very near future. It is important to realize that this law is effective December 7, 1956 and must be implemented by the contracting parties on that date beginning at 12:01 a.m. Any individual M.D. may refuse to join in this plan if he should so desire not to participate.

As regards the arbitration set-up over disputed claims, etc., it was decided by your Council that the members now serving on the professional committee of Blue Shield, with the addition of the Medicare program chairman, represent the Association at the present time as the arbitration board over any dispute or questionable claim for services rendered by

Association members. It is to be noted that in instances not fully covered by the printed fee schedule, a provision is made for special report on the part of the attending M.D., and they will be given proper and fair consideration.

Your Medicare Committee of the Arizona Medical Association does not feel that this is socialization of medicine, although your Chairman must confess that this was his first opinion of the act when he attended the Denver regional meeting; however, after considerable study of all factors involved, we feel it is basically a service-type insurance coverage similar to the numerous other such plans in existence through the unions and companies throughout the United States, except that in this case the United States of America is the underwriter, the Army is its executive agent, and John Doe, taxpayer, foots the bill. If we stop to realize that the average income of the armed forces personnel even including the 14% top brass is only approximately \$3300 yearly, the fairness of this coverage to the eligible dependents seems obvious. As long as we play fair as a group of M.D.s, I am sure the United States will be equally as fair. Remember that your State Association and its constituents basically are the ones that are in the control. By that I mean the doctor is still the doctor, and we are fundamentally controlling the program.

I, as Chairman of the Medicare Committee, wish to thank Doctor Podolsky, Doctor Jarrett, and Mr. Carpenter, for their conscientious, time-consuming and valuable efforts in working entirely as a team to negotiate a very satisfactory contract. I especially wish to give praise to Mr. Edward Jacobson for a most brilliant legal representation on behalf of the Arizona Medical Association, and to Mr. L. Donald Lau and his staff for their tedious and time-consuming work in helping outline these schedules and procedures both in many special meetings and at the Washington, D. C. meeting.

F. W. Edel, M.D., Chairman

Public Law 569 — 84th Congress
Chapter 374 — 2d Session
H. R. 9429

AN ACT

To provide medical care for dependents of members of the uniformed services, and for other purposes.

Dependents' Medical Care Act.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Dependents' Medical Care Act".

TITLE I

Purpose.

Sec. 101. The purpose of this Act is to create and maintain high morale throughout the uniformed services by providing an improved and uniform program of medical care for members of the uniformed services and their dependents.

Sec. 102. (a) As used in this Act —
"Uniformed services".

(1) The term "uniformed services" means the Army, the Navy, the Air Force, the Marine Corps, the Coast Guard, the Commissioned Corps of the Coast and Geodetic Survey, and and the Commissioned Corps of the Public Health Service.

"Member of a uniformed service".

(2) The term "member of a uniformed service" means a person appointed, enlisted, inducted or called, ordered or conscripted in a uniformed service who is serving on active duty or active duty for training pursuant to a call or order that does not specify a period of thirty days or less.

"Retired member of a uniformed service".

(3) The term "retired member of a uniformed service" means a member or former member of a uniformed service who is entitled to retire, retirement, or retainer pay or equivalent pay as a result of service in a uniformed service, other than a member or former member entitled to retired or retirement pay under title III of the Army and Air Force Vitalization and Retirement Equalization Act of 1948 who has served less than eight years of active duty as defined in section 101 (b) of the Armed Forces Reserve Act of 1952.

62 Stat. 1087. 10 USC 1036-1036i and notes. 66 Stat. 481. 50 USC 901.

"Dependent".

(4) The term "dependent" means any person who bears to a member or retired member of a uniformed service, or to a person who died while a member or retired member of a uniformed service, any of the following relationships —

(A) the lawful wife;

(B) the unremarried widow;

(C) the lawful husband, if he is in fact dependent on the member or retired member for over one-half of his support;

(D) the unremarried widower, if he was in fact dependent upon the member or retired member at the time of her death for over one-half of his support because of a mental or physical incapacity;

(E) an unmarried legitimate child (including an adopted child or stepchild), if such child has not passed his twenty-first birthday;

(F) a parent or parent-in-law, if the said parent or parent-in-law is, or was at the time of the member's or retired member's death, in fact dependent on the said member or retired member for over one-half of his support and is, or was at the time of the member's or retired member's death, actually residing in the household of the said member or retired member; or

(G) an unmarried legitimate child (including an adopted child or stepchild) who (i) has passed his twenty-first birthday, if the child is incapable of self-support because of a mental or physical incapacity that exists prior to his reaching the age of twenty-one and is, or was at the time of the member's or retired member's death, in fact dependent on him for over one-half of his support, or (ii) has not passed his twenty-third birthday and is enrolled in a full-time course of study in an institution of higher learning as approved by the Secretary of Defense or the Secretary of Health, Education, and Welfare and is, or was at the time of the member's or the retired member's death, in fact dependent on him for over one-half of his support.

Administration.

(b) Except as otherwise provided in this Act, the Secretary of Defense shall administer this Act for the Army, Navy, Air Force, and Marine Corps and for the Coast Guard when it is operating as a service in the Navy, and the Secretary of Health, Education, and Welfare shall administer it for the Coast and Geodetic Survey and the Public Health Service, and for the Coast Guard when it is not operating as a service in the Navy.

Utilization of medical facilities.

Sec. 103. (a) Whenever requested, medical care shall be given dependents who died while

a member of a uniformed service, in medical facilities of the uniformed services subject to the availability of space, facilities, and the capabilities of the medical staff. Any determination made by the medical officer or contract surgeon in charge, or his designee, as to availability of space, facilities, and the capabilities of the medical staff, shall be conclusive. The medical care of such dependents provided for in medical facilities of the uniformed services shall in no way interfere with the primary mission of those facilities.

(b) In order to provide more effective utilization of medical facilities of the uniformed services, the Secretary of Defense and the Secretary of Health, Education, and Welfare shall jointly prescribe regulations to insure that dependents entitled to medical care in a medical facility of a uniformed service under the provisions of this Act shall not be denied equal opportunity for medical care because of the service affiliation of the service member.

Charges.

(c) The Secretary of Defense, after consultation with the Secretary of Health, Education, and Welfare, shall establish fair charges for inpatient medical care given dependents in the facilities of the uniformed services, which charges shall be the same for all dependents.

(d) As a restraint on excessive demands for medical care under this section, uniform minimal charges may be imposed for outpatient care but such charges shall be limited to such amounts, if any, as may be established by the Secretary of Defense after consultation with the Secretary of Health, Education, and Welfare, under a special finding that such charges are necessary.

(e) Any amounts that are received in payment for subsistence and medical care rendered dependents in facilities of the uniformed services shall be deposited to the credit of the appropriation supporting the maintenance and operation of the facilities furnishing the care.

Limitations.

(f) Medical care under this section shall be limited to the following:

(1) Diagnosis;

(2) Treatment of acute medical and surgical conditions;

(3) Treatment of contagious diseases;

(4) Immunization; and

(5) Maternity and infant care.
(g) 1) Hospitalization under this section is not authorized dependents for domiciliary care.

(2) Hospitalization under this section is not authorized dependents for nervous and mental disorders, chronic diseases, or elective medical and surgical treatments, except that the Secretary of Defense, after consultation with the Secretary of Health, Education, and Welfare, by regulation, may provide in special and unusual cases for hospitalization of not to exceed twelve months for dependents for such disorders or such diseases, or for such treatments.

(h) Dependents shall not be provided under this section —

(1) prosthetic devices, hearing aids, orthopedic footwear, and spectacles, except that outside the continental limits of the United States and at remote stations within the continental limits of the United States where adequate civilian facilities are not available, those items, if available, from Government stocks, may be provided to dependents at prices representing invoice cost to the Government;

(2) ambulance service, except in acute emergency;

(3) home calls, except in special cases where it is determined by the medical officer or contract surgeon in charge, or his designee, to be medically necessary;

(4) dental care, except —

(A) emergency care to relieve pain and suffering but not to include any permanent restorative work or dental prosthesis;

(B) care as a necessary adjunct to medical or surgical treatment; and

(C) outside the continental limits of the United States, and in remote areas within the continental limits of the United States where adequate civilian dental facilities are not available.

TITLE II

Spouses and children. Insurance plan, etc.

Sec. 201. (a) In order to assure the availability of medical care for the spouses and children who are dependents of members of the uniformed services, the Secretary of Defense, after consultation with the Secretary of Health, Education, and Welfare, shall contract for medical care for such persons, pursuant to the provisions of this title, under such insurance, medical service, or health plan or plans as he deems appropriate, which plan or plans shall, subject

to the provisions of section 204 hereof, include the following:

(1) Hospitalization in semiprivate accommodations up to three hundred and sixty-five days for each admission, including all necessary services and supplies furnished by the hospital during inpatient confinement;

(2) Medical and surgical care incident to a period of hospitalization;

(3) Complete obstetrical and maternity service, including prenatal and postnatal care;

(4) Required services of a physician or surgeon prior to and following hospitalization for a bodily injury or for a surgical operation;

(5) Diagnostic tests and procedures, including laboratory and X-ray examinations, accomplished or recommended by a physician incident to hospitalization.

For each admission the plan shall also provide for payment by the patient of hospital expenses incurred under paragraph (1) hereof in the amount of either (1) \$25 or (2) the charge established pursuant to section 103 (c) of this Act multiplied by the number of days hospitalized, whichever is the greater.

(b) Subsection (a) shall be subject to such reasonable limitations, additions, exclusions, definitions, and related provisions as the Secretary of Defense, after consultation with the Secretary of Health, Education, and Welfare, may deem appropriate, except that medical care normally considered to be outpatient care shall not be authorized by this subsection.

(c) The dependents covered under this section may elect to receive medical care under the terms of this Act in either the facilities of a uniformed service under the conditions specified in title I of this Act or in the facilities provided for under such insurance, medical service, or health plan or plans as may be provided by the authority contained in this section, except that the right to such election may be limited under regulations prescribed by the Secretary of Defense, after consultation with the Secretary of Health, Education, and Welfare, for such dependents residing in areas where the member concerned is assigned and where adequate medical facilities of a uniformed service are available for any such dependents.

Review.

Sec. 202. Any insurance, medical service, or health plan or plans which may be entered

into by the Secretary of Defense with respect to medical care under the provisions of this Act shall contain a provision for a review, and, if necessary, an adjustment of payments by the Secretary of Defense or Secretary of Health, Education, and Welfare not later than one hundred and twenty days after the first year the plan or plans have been in effect and each year thereafter. Within ninety days after each such review, the Secretary of Defense shall submit to the Committees on Armed Services of the Senate and of the House of Representatives a report covering the payments made during the year reviewed, including any adjustment thereof.

Report to Congressional committees.

Advisory committees.

Sec. 203. In order to effectuate the purposes of this title, the Secretary of Defense is authorized to establish insurance, medical service, and health plan advisory committees to advise, consult, and make recommendations to the Secretary of Defense, provided that the Secretary issues regulations setting forth the scope, procedures, and activities of such committees. These committees shall consist of the Secretary of Defense or his designee, who shall be chairman, and such other persons as the Secretary may appoint. Their members shall be, to the extent possible, representative of insurance, medical service, and health plan or plans, and shall serve without compensation but may be allowed transportation and per diem in lieu of subsistence and other expenses.

Scope of plan.

Sec. 204. The scope of medical care provided under this title shall not exceed the maximum care provided under title I of this Act.

TITLE III

Medical and dental care.

Sec. 301. (a) Medical and dental care in any medical facility of the uniformed services shall, under regulations prescribed jointly by the Secretaries of Defense and Health, Education, and Welfare, be furnished to all persons on active duty or active duty for training in the uniformed services.

(b) Medical and dental care in any medical facility of the uniformed services may, under regulations prescribed jointly by the Secretaries of Defense and Health, Education, and Welfare, be furnished upon request and subject to the availability of space, facilities, and capabilities

of the medical staff, to retired members of the uniformed services.

(c) Medical care in any medical facility of the uniformed services may, under regulations prescribed jointly by the Secretaries of Defense and Health, Education, and Welfare, be furnished upon request and subject to the availability of space, facilities, and capabilities of the medical staff, so dependents of retired members of the uniformed services and dependents of persons who died while a retired member of a uniformed service, except that any such care furnished such dependents shall be limited to the care authorized dependents of members of the uniformed services under title I of this Act.

(d) When a person receives inpatient medical or dental care pursuant to the provisions of this Act in a facility of a uniformed service that is not the service of which he is a member or retired member, or that is not the service of the member or retired member upon whom he is dependent, the appropriation supporting the maintenance and operation of the medical facility furnishing the medical care shall be reimbursed at rates established by the Bureau of the Budget to reflect the average cost of providing such care.

Subsistence charges.

Sec. 302. Commissioned officers and warrant officers, active and retired, shall pay an amount equal to the portion of the charge established under section 103 (c) of this Act that is attributable to subsistence when hospitalized in a medical facility of a uniformed service. Retired enlisted personnel, including members of the Fleet Reserve and the Fleet Marine Corps Reserve, shall not be charged for subsistence when hospitalized in a medical facility of a uniformed service.

Additional hospitalization.

Sec. 303. When a person who is covered under an insurance, medical service, or health plan or plans, as provided in this Act, requires hospitalization beyond the period of time provided under such plan or plans, if such hospitalization is authorized in medical facilities of a uniformed service, such person may be transferred to a medical facility of a uniformed service for the continuation of such hospitalization. Where movement to such medical facility is not feasible, the expenses for such additional

hospitalization required by such person in a civilian facility are authorized to be paid, subject to such regulations as the Secretary of Defense after consultation with the Secretary of Health, Education, and Welfare may prescribe.

Dependency determinations.

Sec. 304. All determinations made under this Act by the Secretary of Defense or the Secretary of Health, Education, and Welfare with respect to dependency shall be conclusive for all purposes and shall not be subject to review in any court or by any accounting officer of the Government, except for cases involving fraud or gross negligence. Such determination may at any time be reconsidered or modified on the basis of new evidence or for other good cause.

Appropriations.

Sec. 305. There are hereby authorized to be appropriated such sums as may be necessary to carry out the provisions of this Act.

Repeals.

Sec. 306. The following laws and parts of laws are hereby repealed:

(1) So much of the Act of July 5, 1884 (ch. 217, 23 Stat. 107), as is contained in the proviso under the heading "Medical Departments";

24 US 32-36. Exception.

(2) The Act of May 10, 1943 (ch. 95, 57 Stat. 80), except section 4 of such Act, and except that part of section 5 which relates to persons outside the Naval Service mentioned in section 4 of such Act;

(3) Section 326 (b) of the Public Health Service Act, except as it relates to dependent members of families of ships' officers and members of crews of vessels of the Coast and Geodetic Survey;

58 Stat. 697. 42 USC 253.

(4) Section 710 (a) of the Act of July 1, 1944 (ch. 373, 58 Stat. 714), as amended;

63 Stat. 201. 10 USC 456-456-2 and notes.


(5) Public Law 108, approved June 20, 1949, to the extent it authorizes hospital benefits for dependents of members of the reserve components of the Armed Forces;

34 USC 854f.

(6) Section 207 of the Act of June 25, 1938 (52 Stat. 1180).

Effective date.

Section 307. This Act shall become effective six months after the date of its enactment.



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Notes From Desk Of The Executive Secretary

MEDICARE PROCEDURES AND POLICY

UNQUESTIONABLY, many directives will issue providing more details on Medicare procedures and policy. To keep the medical profession informed, a few are listed below:

IDENTIFICATION: Military dependents may submit as identification their post exchange card, the combined post exchange-commissary-military medical care card, or the standard military dependent identification card. After next July 1 the only identification honored will be a special Defense Department medicare card.

PAYMENT FOR DRUGS: The Office of Dependent's Medical Care advises there are no plans for authorizing payment for drugs, medicals or other medical supplies, except those furnished while hospitalized or those administered directly by a physician.

CLAIM FORMS: The Government printing office is turning out large quantities of the claim form entitled "Statement of Services Provided by Civilian Medical Sources." They are being forwarded to the states as rapidly as possible and unquestionably you will be furnished with copies through the Association's fiscal agent.

GENERAL: It is intended that civilian medical care under the program will be comparable to that provided in armed services facilities. Physicians participating will receive payment in full from the Government in accordance with the published schedule of allowances or under a special report. **IN MOST INSTANCES, THIS MEANS THAT THE DOCTOR WILL RECEIVE PAYMENT FOR HIS USUAL CHARGE OR THE AMOUNT SET IN THE SCHEDULE, WHICHEVER IS LESS.** In instances in which the physician believes that an allowance greater than that prescribed in the local schedule is justified, he should look to the Government rather than the patient for payment. Provision is made for the doctor to submit a special report to his State Medical Society and in turn to the Government as a request for additional payment. Such payment will be made upon approval by the Society's review board and the Government contracting officer.

SELECTIVE SERVICE CALL

Selective Service plans to call up 450 physicians next February, 250 of them for the Army and 200 for the Air Force. This is the largest single call since the Army, Navy and Air Force took 1,275 men in March, 1955. The draft call prior to the latest one was for 300 men in October, 380 men in July and 297 men in February — all of 1956. Since the program went into effect in 1950 at the time of the Korean War the special draft has brought 10,337 physicians into the services. Effort is being made to make sure that younger (under 37 years) priority 3 physicians in residency training who have been deferred are really essential to the operation of the hospitals. It is hoped that there is yet time to get a sufficient number of younger men reclassified into Class A-1 to satisfy these proposed calls without going into the upper age bracket.

The Doctor Draft Bill is scheduled to expire next July 1; it is indicated by the Defense Department it will propose another extension.

Robert Carpenter, Executive Sec'y.

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MEDICAL SCHOOL SURVEY

By Dermont W. Melick, M.D.

FOR THE past few years, there has been a slow burning enthusiasm among some members of the Arizona Medical Association for establishment of a Medical School in Arizona. In order that enthusiasm be not supplanted by emotional thinking, the Arizona Medical Association decided to gather some facts for the membership. It is emphasized that the Arizona Medical Association is not, at this time anyway, promoting a Medical School for the state of Arizona. The function of the Medical School Committee of the Arizona Medical Association is to gather the facts in order that a mid-way point of understanding can be had for two groups. One group of our members are convinced that Arizona should have a Medical School established in the immediate future and are satisfied that a two year Medical School would be an adequate beginning. These individuals also believe that the ability to teach Medical School students lies well within the capability of a number of individuals within our Medical Association. There is another group of individuals who believe that Arizona is not ready for a Medical School within the foreseeable future because of the enormous expense and our small population. This second group also believes that teaching in a Medical School is a full time job and a Medical School in Arizona would require the importation, for the most part, of full time teachers for the Medical School.

It was soon obvious to the members of the Medical School Committee of the Arizona Medical Association that these two groups had one thing in common. The common denominator was the complete lack of facts upon which either group could base their contentions either pro or con. As ideas without facts have often led to action without reason it is doubly important that the Medical School Committee get the facts together for its membership.

The Medical School Committee has had two meetings, one in Phoenix and one in Tucson and to date have the following information to pass along:

1. The Western Inter-State Commission for Higher Education is conducting a survey entitled MEDICAL MAN POWER REQUIREMENTS IN THE WEST. This survey will take

approximately one year to complete, but when completed it will be all inclusive and will have the necessary facts for the citizens of Arizona, the Legislature, the leaders of our institutions for higher learning, as well as our own two groups in the Arizona Medical Association. This survey comes at an opportune time as the Legislature has exhibited an interest in the Medical School problem and this should relieve the Legislature from expending funds for a separate survey on the subject. The State of Arizona will be participating financially in this survey as a member of the Western Inter-State Commission for Higher Education.

2. Dr. John Z. Bowers, Dean of the University of Wisconsin Medical School and immediate Past Dean of the University of Utah Medical School, is expected to make an informal survey of the facilities at both Tempe and Tucson in the early part of 1957. We are receiving cooperation from the Arizona State College at Tempe through Dr. Grady Gammage and the University of Arizona at Tucson through Dr. Richard Harvill. Dr. Bowers, in his previous post at the University of Utah Medical School, understands the financial problems as well as the faculty problems in a state where the population is small and the financial resources limited.

3. Dr. Harold Enarson, Executive Director of the Western Inter-State Commission for Higher Education, will visit both Tucson and Phoenix in the early part of 1957. He will introduce the methods of study for the Western Inter-State Commission for Higher Education. He will also present some basic factual data with regards to establishment of a Medical School whether it be here or some other state.

4. A questionnaire has gone to all members of the Arizona Medical Association in order to determine what, if any, teaching experience the members of our Association have had in the past. It will also determine the number of those who are willing to assist in teaching in case they are asked to do so.

The four points above enumerated will give us facts, opinions and statistics and from them it is hoped the Medical School Committee of the Arizona Medical Association can present to both our optimistic and pessimistic members the information that will allow both to reach a mutually agreeable decision on the Medical School problem.

TREATMENT OF RADIATION INJURIES

By E. P. Cronkite, Cdr., (MC) USNR

RADIATION injury is a new addition to problems of military medicine in the future. Perhaps it would be best to review the nature of radiation injury and its diagnosis. This background would enable the physician to logically consider the care of radiation injury, which, in contrast to thermal burns, during its inception has one merit — it is generally painless. Radiation injuries may be divided into superficial injuries produced by less penetrating forms of radiation, i.e. beta, and the various syndromes of whole-body radiation injury that are produced by more penetrating forms of radiation, e.g. high energy gamma radiation and fast neutrons. To the large animal it makes little difference whether the syndromes of whole-body radiation are produced by gamma or fast neutrons. The results are approximately the same and the relative effectiveness of the neutron is not much greater than that of gamma radiation alone (1). The two appear to be additive. There are two sources of radiation. First, the short burst radiation that is produced at the time of detonation of the weapon and shortly afterwards consisting of gamma radiation and neutrons. Second, the field of residual radiation that is produced by neutron induced radioactivity in the soil and by the distribution of fission products on the ground. The latter is insignificant with conventional high air-burst weapons, but becomes of considerable importance with ground or close to ground, particularly high yield bursts as was accidentally demonstrated in the Pacific in March of 1954.

First, I will consider the syndromes of whole-body radiation injury. The syndrome varies with the dose of radiation. For practical purposes, the syndromes can be divided into three distinct types: first, the **NEUROLOGICAL TYPE** in which death is immediate or occurs within a few hours and is characterized by neuro-muscular symptoms; second the **GASTRO-INTESTINAL TYPE** with death occurring within three to six days and characterized by gastro-intestinal symptoms such as nausea, vomiting and the concomitant dehydration as a result of the loss of fluids and electrolytes; third, the

HEMOPOIETIC TYPE which may produce death within one to eight weeks. The latter is characterized by the sequelae of pancytopenia; namely, anemia, hemorrhage and infections in the presence of granulocytopenia. It is the latter syndrome with which one is concerned for practical purposes. The doses of radiation which produce the gastro-intestinal syndrome have been shown in animals to be almost uniformly fatal. The experiences of the Japanese at Hiroshima and Nagasaki tend to bear this out. The neurological type of syndrome was not observed by the Japanese, but in animal experimentation has been shown to be uniformly fatal. Amounts of radiation in excess of 2,000 r are required, quantities which, in the terms of our present knowledge, are absolutely fatal doses of radiation. Experimentally, it has been shown by Conrad et al. (2) that the gastro-intestinal syndrome is in itself not necessarily fatal and that in dogs the large-scale replacement of fluids and electrolytes may prolong life with histologic recovery of the gastro-intestinal mucosa. However, the animals die at a later time from the sequelae of pancytopenia with an aplastic bone marrow. From a practical standpoint one is therefore confronted with the therapy of the hemopoietic syndrome. Since the syndrome of radiation injury, due to whole-body penetrating radiation, varies with the dose, the symptomatology in a sense, is a dosimeter. However, estimations of the severity of exposure to gamma radiation in the lower dose ranges becomes of considerable practical importance since survival in the lethal range is dose dependent. The problems involved with estimation of dose received by the individual are really difficult. It is possible that dose estimates may be available from dosimetry devices, or from dose contour lines and the position of the individual during exposure. Some of the difficulties of relying heavily on dose estimates are obvious. The exact position of the individual and the degree of shielding will not be known. The dosimetry device records the dose the instrument receives which may not reflect accurately because of shielding, energy dependence of the device, etc., the dose received by the individual. More important, because of individual differences in sensitivity, individuals exposed to the same measured dose may differ widely in their responses. Thus, no estimate of dose derived from dosimeters or

from the position of the individual during exposure can be taken as an accurate index of the probable fate of an individual, or as the final index to therapy, triage or prognosis.

The best approach for estimating the seriousness of exposure of the individual may be termed, the symptomatic approach. As with any disease, an accurate appraisal of the patient's condition results only from a thorough evaluation of the history, physical and laboratory examination. If heavy exposure has occurred, nausea and vomiting will follow in most individuals within a few hours. This does not necessarily indicate a poor prognosis. Heavily exposed individuals may be divided into three groups in which survival is respectively, IMPROBABLE, POSSIBLE and PROBABLE. It will be apparent that there is no sharp line of demarcation between the groups.

Group 1 — SURVIVAL IMPROBABLE:

If vomiting occurs promptly or within a few hours and continues and is followed in rapid succession by prostration, diarrhea, anorexia, fever, the prognosis is grave; death will almost definitely occur in 100% of the individuals within the first week. There is no known therapy for these people, accordingly in a catastrophe attention will be devoted to others for whom there is some hope.

Group 2 — SURVIVAL POSSIBLE:

Vomiting may occur early but will be of relatively short duration, followed by a period of well-being. In this period of well-being, marked changes are taking place in the hemopoietic tissues. Lymphocytes are profoundly depressed within hours and remain so for months. The neutrophile count is depressed to low levels, the degree and time of maximum depression depending upon the dose. Signs of infection may be seen when the total neutrophile count has reached virtually zero (7-9 days). The platelet count may reach very low levels after two weeks. External evidence of bleeding may occur within two to four weeks. This group represents the lethal dose range in the classical pharmacologic sense. In the higher exposure groups of this category the latent period lasts from one to three weeks with little clinical evidence of injuries other than slight fatigue. At the termination of the latent period, the patient may develop purpura, epilation, oral and cutane-

ous lesions, infections of wounds or burns, diarrhea, and melena. The mortality will be significant. With therapy the survival time can be expected to be prolonged and if sufficient time is provided for bone marrow regeneration the survival rate will be increased.

Group 3 — SURVIVAL PROBABLE:

This group consists of individuals who may or may not have had fleeting nausea and vomiting on the day of exposure. In this group there is no further evidence of effects of the exposure except the hematologic changes that can be detected by serial studies of the blood with particular reference to lymphocytes and platelets. The lymphocytes reach low levels early, within 48 hours, and may show little evidence of recovery for many months after exposure. The granulocytes may show some depression during the second and third week. However considerable variation is encountered. A late fall in the granulocytes during the sixth or seventh week may occur and should be watched for. Platelet counts reach the lowest on approximately the 30th day at the time when maximum bleeding was observed in the Japanese who were exposed at Hiroshima and Nagasaki. This time trend in the platelet count and the development of hemorrhage is in marked contrast to that seen in laboratory animals when platelets reach their lowest level around the 10th to 15th days and hemorrhage occurs shortly thereafter.

The syndromes described above may occur not only as a result of exposure to the initial radiation from the atomic bomb but may also be produced by exposure to radiation from fall out. In the case of the former, radiation is received over a period of only a few seconds and in the latter the dose rate varies with the time after detonation. The dose rate from the field of fission products varies roughly with the minus 1.2 law. For example, the dose rate one hour after the blast will fall 44% of this value within the next hour or two hours after the explosion. However, at ten hours after the blast, the given dose rate will fall by only 11% of its value during the next hour; for example, the dose rate at 11 hours will be 89% of what it was at ten hours. In other words, if the maximum fall out and thus the maximum exposure rate to fall out has not occurred for several hours after the explosion,

the rate of fall off in the area obviously will not be as rapid as it would be from earlier fall out material. In the case of very early fall out shelter is essential until evacuation because of the high dose rates. In the case of fall out occurring at a later interval when the dose rate is relatively constant and much lower, evacuation and/or shelter will significantly reduce the total exposure. The initial radiation and fall out radiation also vary in respect to the effective energy. As shown by Cronkite et al. (3) the spectrum of the atomic bomb gamma radiation at distances in which survival is possible behaves biologically like the radiation from a 250 KVP X-ray machine. This results because the primary beam has attained equilibrium in air from successive Compton scattering. The spectrum from the field of fall out radiation has a very wide spectrum of inherent energy that is degraded by Compton scattering so that there are peaks at 100 KEV, 600 to 800 KEV, and 1,600 KEV. In respect to effectiveness of shelters in the fall out area, the following estimates have been released (4). A frame house would reduce the total dose received by one-half; a brick or concrete structure would be more effective obviously. The basement would reduce the total exposure to about one-tenth of the air value. In a shelter of thickness equivalent to 3 ft. of earth, the dose would be reduced 1/5,000 of its value, affording complete protection in the most heavily contaminated area.

The relative radii of effectiveness of ionizing radiation, blast, and thermal effects vary with weapon size. With small weapons the radiation is relatively more effective. However, with the larger weapons the initial radiation does not extend beyond the reach of total destruction by blast and thermal effects. Accordingly, in the latter situation radiation injury from the prompt radiation is relatively unimportant because those who would be in the region where recovery is possible from radiation alone would have a very little chance of surviving from the other effects of the device. However, it is feasible to get good protection from the blast and thermal effects of small weapons by appropriate use of cover and shelter. In this tactical situation radiation injury uncomplicated by trauma may be seen. With super weapons fall out is probable and has been shown capable of producing radiation injuries (5). As a result

of this accident in 1954 a considerable amount of information was obtained on the nature of both skin and wholebody radiation injury of human beings produced by exposure to fall out radiation. The radiation injury of the skin produced by fall out can best be described illustratively with the actual injuries that took place in the Marshall Islands. Following the visible snow-like fall out, there was burning and itching of the skin on the day of exposure, lacrimation and burning of the eyes. These symptoms subsided promptly. At the time of appearance of the lesions, there was considerable burning and pain connected with movement. Treatment of these lesions was entirely symptomatic except for those which became infected. In these instances parenteral penicillin and aureomycin ointment was used.

Considerable amount was also learned about whole-body radiation of the human being in the sublethal range. Following 175 r whole-body radiation, the following sequence of events was observed in the peripheral blood. It is apparent that leukopenia and thrombopenia were present in all of the exposed individuals. Granulocyte counts as low as 500 and platelet counts as low as 35,000 were observed. However, only for a short period of time. Had the dose of radiation been larger the depression would have been more pronounced and of longer duration. For our purposes here, there is no need to go into a detailed study of the dose response of the granulocytes and the platelets nor of the fact that the duration of depression increases as the dose increases. In a general sense there is a period of time during which life is compatible with very low granulocyte and platelet counts. However, if marrow recovery does not occur within a matter of a week or so the probability of overwhelming infections and massive hemorrhage becomes increasingly greater. Anemia will become prominent as blood is lost by hemorrhage and the marrow fails to produce new cells. The therapeutic problem is obviously the treatment of the sequelae of pancytopenia, namely, infections, hemorrhage, and anemia. Since little can be done for the anemia and hemorrhage except replacement of blood as needed to sustain life the therapy is mainly aimed at control of infection. In most species infection is a predominant cause of death in the lethal range, however obliteration of infection by the germ

free state in rats does not eliminate death due to other causes (6). In these animals death occurs from hemorrhage and a profound anemia.

The increased susceptibility to infection results from multiple causes and has been recently reviewed (1) and may be summarized as follows:

- a. Granulocytes are decreased in number.
- b. Granulocytic functions are impaired.
- c. The reticuloendothelial system phagocytizes bacteria but does not kill the ingested bacteria as readily.
- d. Acquired antibody production is diminished.
- e. Natural antibody (properdin) titres decrease.

- f. The connective tissue of the skin is altered.

There is little wonder that infection occurs with almost all defenses impaired. In fact, infections are generally produced by commensal organisms in addition to pathogens if present in endemic or epidemic states. Experimental work in animals has clearly demonstrated that immunization to specific bacteria increases the survival rate when the animals are later challenged by the same bacteria (7, 8). In addition, antibiotics have been shown to be of definite value when the offending organism is susceptible to the antibiotic and when the dose of radiation is in the mid-lethal range. Accordingly, certain general principles can be stated about therapy:

1. Active immunization in those instances when feasible will increase the chances of survival against specific infections. This is automatically accomplished in the military establishment and should be urged for the population at large.

2. Diverse antibiotics with a wide antibacterial spectrum are needed in the stockpile.

3. Group 3 type casualties will need little or no active therapy per se — observation and orthodox treatment of complicating wounds or burns should suffice. It was learned that the group 3 category of radiation casualties could tolerate an epidemic of upper respiratory infections, presumably of viral origin, with no untoward effects. Of considerable importance logistically this category can be ambulatory, physically fairly active and should be useful citizens or soldiers while under observation. For more definitive management of radiation injury

it appears desirable to divide the problem into the ideal situation, where there are only one or a few casualties and the problem of mass management in the case of nuclear warfare. In the former case the situation should be handled as a research problem and in the latter case compromises must be made in order to distribute medical care where it will be most effective in aiding national survival. First the ideal situation will be considered for each of the categories described earlier:

Group - — SURVIVAL IMPROBABLE:

1. Bed rest will be mandatory since these individuals will be sick from the time of exposure.

2. Nutrition will be parenteral. Water and electrolyte balance will have to be maintained by large volumes of intravenous saline — glucose, plasma, and balanced electrolytes as necessary. For a matter of many days the bowel will not tolerate anything other than small quantities of fluids.

3. Nursing care must be of the highest order. Particular attention should be paid to the hygiene of the mouth, teeth, skin and the perineal area since these are the locations aside from wounds where infection frequently develops and progresses to an overwhelming sepsis. Asepsis is paramount.

4. From the fifth day after exposure one can anticipate the development of spontaneous infection at most any time. Antibiotics should be commenced about the fifth day and one should be prepared to use them in combination with maximum doses as necessary to control infection.

5. From the 7th day on, an anemia, due to hemorrhage and cessation of blood cell production, will develop unless dehydration produces a hemoconcentration. A reasonable plasma volume must be maintained. As anemia develops fresh whole blood collected in plastic bags with di-sodium salt of ethylenediamine tetra-acetate (EDTA) as the anticoagulant should be administered as necessary. If hemorrhage is prominent in presence of a marked thrombopenia, platelet transfusions should be given daily.

6. One should seriously consider the use of homologous intravenous or intramedullary bone marrow, even though permanent restoration of

hemopoiesis has only resulted with genetically specific bone marrow (1).

7. Complete electrolyte and blood chemistry studies should be performed and all excreta saved and properly measured for studies of amino acid and steroid excretion in addition to other substances that may become of importance in the future.

8. Since knowledge of severe radiation injury in human beings is scanty extensive studies on the metabolic cycle of labelled compounds should be pursued at every opportunity. In parallel all efforts should be made to prolong life as long as possible in order to learn more about the spontaneous course of human radiation injury.

Therapy of Group 2 — SURVIVAL POSSIBLE:

1. The general management of this category is identical to group 1 but will not demand so much attention during the first few days since vomiting and diarrhea will subside within a day or so.

2. Infection is the major hazard as in group 1. Meticulous daily physical examinations looking for evidence of beginning infection are the key to therapy and commencement of antibiotics, oral and parenteral. Premature administration is contraindicated because of the hazards of sensitization of the patient and development of bacterial resistance to the antibiotics.

3. Transfusions of whole blood or separated platelets and leukocytes will be indicated by the need. Transfusions should be resorted to only when actually needed since there is no evidence to date that maintenance of red cell and platelet levels will increase the survival rate per se. One can qualify need as distressing anemia for whole blood, spontaneous bleeding for platelets and infection uncontrolled by antibiotics for leukocytes.

Therapy of Group 3 —

None needed. Observations are identical.

All radiation injury complicated by wounds and burns, will be more serious. The development of bacterial epidemics will probably lessen the probability of survival from radiation injury. A potential complication in combined radiation and traumatic injury is the unfavorable effect of dextran in producing bleeding in the presence

of a lowered platelet count.

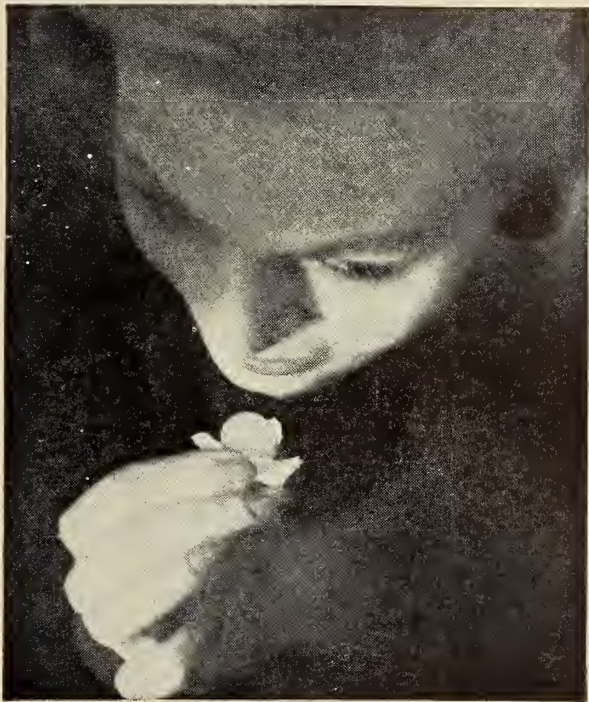
In conclusion, radiation injury per se from fall out should not be a major problem if troops and civilian populations are properly educated and prepared. It can be largely avoided or minimized by shelter or evacuation. Radiation injury from the initial radiation except in special tactical situations will be relatively unimportant. Trauma and thermal burns will dwarf radiation injury as a practical problem. Under catastrophe conditions one must compromise drastically with the ideal situation; reserve stores of blood and plasma for the traumatic casualties when it is of known value; and endeavor to control infection by oral wide spectrum antibiotics. I should like to close in stating that progress is obviously being made in considering mass care of casualties. Compromises in therapy towards expediency have been made. The psychologic adjustments are painful but the compromises enable one to do the most good for the maximum number in view of what is known and available today. It would be unfair to state that there is any early probability of developing an antidote for radiation injury. Much has been learned about the spontaneous course and the acceleration of restoration from radiation injury at an experimental level but there is nothing that is clinically practical for use on human beings on any scale at the present time.

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EDITOR'S NOTE

The above article is reproduced by permission from the Journal MILITARY MEDICINE. The April issue of this publication was an excellent review of the Management of MASS CASUALTIES and the Treatment of Injuries in Association with Atomic Warfare. A 188 page reprint of all the articles is available at \$1.50 for the paperback cover or \$3.00 for the hicknurg binding. Address requests to Colonel Robert E. Bitner, Secretary-Editor, Suite 718, New Medical Building, 7126 Eye Street, N. W., Washington 6, D. C.



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CIVIL DEFENSE EMERGENCY HOSPITAL

THE FEDERAL Defense Administration has made available to the State Civil Defense Agency a two-hundred bed emergency hospital. This hospital was shown at the annual meeting of the Arizona Medical Association at the San Marcus Hotel last spring. Later the Phoenix hospital group with the cooperation of many people set the hospital up again and exhibited it in the Harbor Building on North Central, this space being made available through the courtesy of Dr. J. N. Harber. Interest in both showings was not as great as anticipated, but many people had first-hand knowledge from this of the availability of this hospital equipment.

The use of the word "bed" in describing the hospital partakes a little of a "Madison Avenue" adjective as the beds are really army cots, and the equipment of the hospital is of the field type as used by the Armed Services. Many of our physicians and surgeons in the state are quite familiar with this equipment through their experiences in the Armed Services. However, the hospital is well equipped for emergency or disaster needs and is available on call from the State Civil Defense Agency.

At the present time the hospital is stored in a National Guard Building at 52nd Street and McDowell Road, Phoenix. Civil Defense Agency has requisitioned under the Surplus Property Act a trailer van in which it is planned to store the hospital so that when needed, all that will be necessary will be to back up a truck tractor to the van and send the hospital on its way to the disaster or emergency area. The unit is on call from any city or county in the state or hospitals in the various cities.

At the present time we are endeavoring to obtain from Federal Civil Defense Administration a second unit to be based at or near Tucson and hope that it also may be stored in a van similar to the arrangement being made at Phoenix. If we are successful in obtaining this unit, it will be held there under the auspices of the Pima County-City of Tucson Joint Civil Defense Council. Our office is indebted to the Arizona Medical Association for the opportunity to display the hospital at the Chandler meeting and to the Arizona Hospital Association for the display in the City of Phoenix.

Neither display could have been possible

without the cooperation and assistance of the Arizona National Guard in transporting the equipment from its base to the exhibit site.

A partial list of the equipment of the hospital is as follows: two hundred cots, gas generator for X-ray, sterilizers, anesthesia apparatus, litters, Coleman lanterns, cylinders of nitrous oxide and oxygen, ether, alcohol, all types of bandages, blankets, towels, sheeting, etc.

THE ARIZONA MEDICAL ASSOCIATION, INC.

826 Security Building

Phoenix, Arizona

LOCATION OPPORTUNITIES

ASHFORK — Pop. 700 — North centrally located — Railroad center — Contact Mr. J. J. Slamon, Justice of Peace, Ashfork, Arizona.

DAVIS-MONTHAN AIR FORCE BASE — Located on outskirts of Tucson — In need of a General Medical and Surgical officer part time, \$7,465.00 per year. Application should be made to the Civilian Personnel Office at Davis-Monthan.

DOUGLAS — Pop. 10,000 — On the Mexican border in the southeast section of Arizona — Opportunity for associate practice in OALR. Contact James S. Walsh, M.D., 631 9th Street, Douglas, Arizona.

FLAGSTAFF — Pop. 7,500 — Largest city in the north central Arizona trading area — Navajo Ordnance Depot is in the process of recruiting for a medical officer. Navajo Ordnance Depot, Flagstaff, Arizona.

FLAGSTAFF — Excellent opportunity for a pediatrician and for a radiologist. Please contact Morris M. Zack, M.D., 411 Birch Street, Flagstaff, for further information.

GILA BEND — Pop. 2,500 — 80 miles west of Phoenix — Good opportunity for general practitioner. Cattle, cotton and general farming. Office and equipment available. \$150 monthly income from Board of Supervisors. Contact Mrs. J. F. Allison, Box 126, Gila Bend, Arizona.

LAS CRUCES, NEW MEXICO — In South Central part of State and not too distant from El Paso, Texas. Population is approximately 22,000, boasts State College and White Sands proving grounds. General Hospital, 85 beds, fully accredited and staffed by fourteen (14)

doctors. Need Urologist and/or Obstetrician-Gynecologist. For full details write: A. M. Babey, M.D., President of the Staff, 250 West Court Street, Las Cruces, New Mexico.

PAYSON — Pop. 1,800 — Have completed and equipped a new clinic. Are badly in need of a medical doctor and the closest medical facilities are 80 miles away. For further information contact Mrs. Edward W. Laylor, Secretary, Payson Clinic, Inc., Payson, Arizona.

TUCSON — An opening in the Outpatient Department of the Veterans Administration Hospital for a generalist or internist occurred early in September. State license is necessary, but not necessarily an Arizona license. If interested, contact S. Netzer, M.D., Director, Professional Service, V. A. Hospital, Tucson, Arizona.

TUCSON — Opening for a board certified or board eligible Orthopedist to form and head an Orthopedic Department in the Tucson Clinic. Must have had good training in pediatric orthopedics as well as acute trauma and reconstructive work. Are looking for a younger man; however, are willing to consider any well trained physician regardless of age. If interested, contact D. J. Heim, M.D., The Tucson Clinic, 116 North Tucson Boulevard, Tucson, Arizona.

TUCSON — Looking for a General Practitioner for plant services — \$750.00 monthly, 5 days a week. Contact Doctor Meade Clyne, 116 North Tucson Boulevard, Tucson, Arizona.

YOUNGTOWN — Pop. 130 — Located 16 miles from Phoenix, 4 miles from Peoria, 1½ miles from El Mirage, 1 mile from Surprise, each a potential field of practice. Most residents are 60 years of age or older and are in need of medical care. Currently provided at no rental, is office space. A medical center is being planned. Interested doctors may contact Mr. Sid Lambert, Box 61, Marionette, Arizona.

YUMA — Pop. 15,000 — Situated in the Southwest corner of the State on the Colorado River — In need of a county physician. This is an ideal setup for a retired or semi-retired doctor. The doctor should devote all of his time to the job or have a private practice in addition. If interested, call Mr. Robert Odom, collect, at SUnset 3-7843 as soon as possible.

FOR INFORMATION ON OPPORTUNITIES IN THE FIELD OF INDUSTRIAL MEDICINE, CONTACT:

Harold J. Mills, M.D., Phelps Dodge Hospital,

Ajo, Arizona.

Carl H. Gans, M.D., Phelps Dodge Hospital, Morenci, Arizona.

Ira E. Harris, M.D., Miami Inspiration Hospital, Miami, Arizona.

Charles B. Huestis, M.D., Box 928, Hayden, Arizona.

Elvie B. Jolley, M.D., Copper Queen Hospital, Bisbee, Arizona.

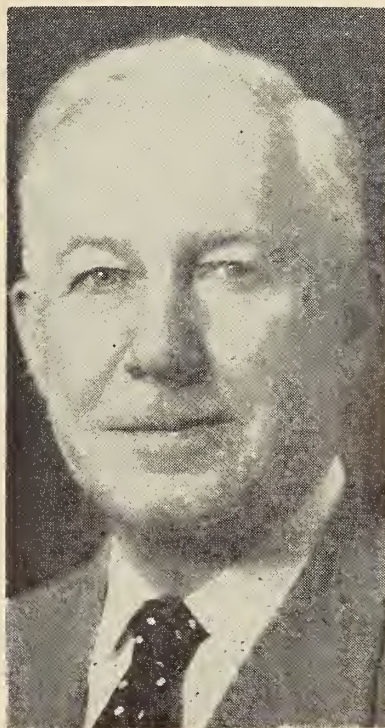
H. W. Finke, M.D., Magma Copper Company Hospital, Superior, Arizona.

John Edmonds, M.D., Kennicott Copper Corporation Hospital, Ray, Arizona.

BLUE SHIELD

THE COMMEMORATION of the ninth anniversary of Arizona Blue Shield was a noteworthy one. An honor of unusual magnitude was accorded our state plan with the presence of Dr. Louis H. Bauer as the distinguished speaker of the evening December 1st at Camelback Inn, Phoenix.

As past president of the American Medical Association, and presently chairman of the board of New York's Blue Shield Plan, Dr.



This is Dr. Louis H. Bauer, past president of the American Medical Association, who was the featured and interesting speaker at the ninth anniversary dinner meeting of Arizona Blue Shield December 1.

Bauer was able to bring meaning and scope to his words. He discussed the future of Blue Shield in the medical-surgical prepayment field.

70 people attended the banquet meeting presided over by Dr. G. Robert Barfoot, president of Arizona Blue Shield. Others on the evening's agenda included Ned F. Parish, assistant director of the Blue Shield Commission, Chicago, and formerly with this plan, and L. Donald Lau, executive director for Blue Cross-Blue Shield in Arizona.

Recognition was bestowed on past board and professional committee members. Dr. Barfoot presented certificates of service to the following board members: Dr. E. A. Born, Prescott; Dr. Walter Brazie, Kingman; Dr. Meade Clyne, Tucson; Dr. Paul Holbrook, Tucson; Dr. E. C. Houle, Nogales; Dr. A. I. Podolsky, Yuma; Dr. Hal W. Rice, Tucson; Mr. Steve Spear, Phoenix; Dr. O. E. Utzinger, Scottsdale; Earle Barrows, Phoenix; Dr. J. Lytton-Smith, Phoenix; Dr. Royal Rudolph, Tucson; John Babbitt, Flagstaff, Dr. Robert Cummings, Phoenix; Dr. Zeph Campbell, Phoenix; Dr. Sebastain Caniglia, Phoenix; Dr. Frederick W. Knight, Safford; Rev. George Ferguson, Phoenix, and John Dirkin, Tucson.

Lau presented similar certificates to past members of the professional committee in the absence of Dr. Clarence Warrenburg. The following received recognition for their services: Dr. E. M. Hayden, Tucson; Dr. Harry Southworth, Prescott; Dr. Kenneth Brillhart, Cottonwood; Dr. Wallace Reed, Phoenix; Dr. Karl Harris, Phoenix and Dr. James Moore, Phoenix, medical director of the plan, who sits in on all professional committee meetings.

Dr. Carlos C. Craig, Phoenix, second president of the plan, presented plaques to Dr. H. D. Ketcherside and Dr. Joseph Greer who served as past chairmen of the professional committee. Both are from Phoenix.

Dr. David C. James, Phoenix, presented a gavel and sounding board duly inscribed to the immediate past president of Blue Shield, Dr. Donald Polson, Phoenix.

In the nine years of the plan, growth and expansion of services and membership have been outstanding. Arizona Blue Shield now has over 900 Participating Physicians and nearly 140,000 members. In 1955 over \$900,000 was paid to doctors of medicine for services rendered Blue Shield members.

BOARD OF MEDICAL EXAMINERS— STATE OF ARIZONA

826 Security Building
Phoenix, Arizona

The Board of Medical Examiners of the State of Arizona at a regular meeting held October 20, 1956, issued certificates to practice medicine and surgery in this State to the following doctors of medicine:

- Anderson, James William
739 Montana Avenue, Lovell, Wyoming
- Baker, Earl John
550 West Thomas Road, Phoenix, Arizona
- D'Amico, Thomas Vincent
368 Ridgewood Avenue, Glen Ridge, N. J.
- Davies, William Dean
Sage Memorial Hospital, Ganado, Ariz.
- Frazin, Bernard
V. A. Hospital, Phoenix, Arizona
- Gagnon, Bernard H.
V. A. Hospital, Whipple, Arizona
- Grant, Austin R.
15 East Monroe, Phoenix, Arizona
- Gruys, Robert Irving
Wells, Minnesota
- Hedegaard, Arne R.
3437 Jackson Street, Denver, Colorado
- Hufton, Wilfrid L.
Tempe, Arizona
- Lawrence, William Doran
420 Star, Hereford, Texas
- Liddicoat, Arthur Gordon
20125 Fenkel Avenue, Detroit 23, Mich.
- List, Martin Lorenz
1313 No. 2nd Street, Phoenix, Arizona
- MacMillan, Richard Karl
Temple U. Med. Center, Philadelphia, Pa.
- Pachtman, Harold
2314 No. 32nd Street, Phoenix, Arizona
- Rhoades, Albert Leonard
15 East Monroe, Phoenix, Arizona
- Sells, Robert Allan
669 So. Union, Los Angeles, California
- Sargent, Warren Felix
Tucson Medical Center, Tucson, Arizona
- Vogt, Anne M. Stupnicki
Arizona State Hospital, Phoenix, Arizona

P-G COURSE DISEASES OF THE CHEST

THE 6TH Biennial Post-Graduate Course on Diseases of the Chest, co-sponsored by the Los Angeles County Tuberculosis and Health Association and the Los Angeles County Medical Association's Section on Diseases of the Chest, will be given on January 31, February 1, and 2 in Los Angeles. The course will be a practical presentation of the current status of chest diseases with special emphasis on diagnosis and treatment. Topics will include diagnostic procedures, emphysema, pneumonia, pleural diseases, pulmonary tuberculosis, carcinoma of the lung, pulmonary function tests, fungus diseases, cor pulmonale, surgery of the heart, and surgery of the esophagus. Its practical nature should be of special importance to the internist and the family physician. Included in the program will be a Cancer Workshop, with division of the class into small discussion groups involving a panel composed of a surgeon, an internist, and a pathologist.

An optional feature on Wednesday, January 30, will be specially arranged observations of local hospital clinics, activities, and conferences.

The faculty will include David T. Carr, M.D., Mayo Clinic, Rochester, Minnesota; Maurice S. Segal, M.D., Boston; Edgar W. Davis, M.D., Washington, D.C.; H. Corwin Hinshaw, M.D., San Francisco; and local chest specialists.

The registration fee of \$35.00 will include a banquet on Thursday evening. Further information and advance registration may be obtained by writing to: David Salkin, M.D., 1670 Beverly Boulevard, Los Angeles 26, California.

Report Of The Delegate Actions Of The House Of Delegates American Medical Association Tenth Clinical Session Nov. 27-30, 1956 Seattle, Washington

YOUR delegate and our Executive Secretary, Mr. Robert Carpenter attended all sessions of the House of Delegates of the A.M.A. held recently in Seattle, Wash.

This report will not attempt to relate in too much detail all actions taken by the House of Delegates because of the space allotment in the State Medical Journal, but will cover a few of the many important subjects dealt with during this session.

Dr. Edward M. Gans of Harlowton, Montana, was announced at the opening session Tuesday as the 1956 General Practitioner of the Year. This annual award, carrying with it a gold medal and a citation, is presented to a family doctor selected by a special committee of the Board of Trustees for outstanding community service. Dr. Gans, who is 80 years old, has practiced medicine for 51 years and has been in the Harlowton area for the past 44 years.

Strongly condemning government intervention in medicine, Dr. Dwight H. Murray of Napa, Calif., A.M.A. President, told the opening session that "the medical profession, along with business and industry, is caught between those who desire to promote sound government programs and those who desire even more intensely to perpetuate party politics. Unfortunately, in recent years a benevolent federal government appears more attractive to the voting public than the preservation of individual freedoms. Medicine must do its utmost to reverse this trend." A copy of the complete address of our A.M.A. President is submitted to the Editor with this report with the hope that it can be published in full in some near future issue of our Journal. It was received with enthusiastic approval by every member of the House of Delegates, and should be read by every member of our State Association.

MEDICAL ETHICS

Subject of greatest interest at Seattle was the proposed, ten-section revision of the Principles of Medical Ethics originally submitted at the June, 1956, Annual Meeting in Chicago, where

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final action was deferred until the Seattle session. The proposed short version of the Principles was resubmitted this week, with some changes based on suggestions received since last June by the Council on Constitution and By-Laws. The House of Delegates, however, decided to refer the matter back to the Council on Constitution and By-Laws for further study and consideration. The reference committee report adopted by the House included the following statements:

"Careful consideration was given to the Preamble and the ten sections of the proposed Principles. The Preamble and seven of the ten sections appear to be acceptable in their present form.

"Sections 6 and 7 were not acceptable as presented either to the group which appeared at the hearing or to your reference committee.

"Out of the general discussion the reference committee received the crystallized opinion that at least four areas needed more specific attention in Sections 6 and 7. These are:

"(1) Division of fees;

"(2) The dispensing of drugs and appliances;

"(3) The corporate practice of medicine;

"(4) Greater emphasis concerning the relationship between physicians and patients.

"In addition, the reference committee felt that the wording in Section 10 could be improved if amended to read as follows:

"The responsibilities of the physician extend not only to the individual but also to society and deserve his interest and participation in activities which have as their objective the improvement of the health and welfare of the individual and the community."

"In view of the above your reference committee believes that the proposed Principles of Medical Ethics should be referred back to the Council on Constitution and By-Laws for further study and consideration of the above stated principles.

"In the short space of time at our disposal and in view of the importance of the subject, your reference committee did not deem it wise to attempt to properly phrase these concepts.

"We would also recommend that if possible this study be completed at least six weeks prior to the June session and that the new version be published in THE JOURNAL in order that all interested physicians might have an opportunity to comment thereon. The ten-section re-

vision of the Principles of Medical Ethics was printed in the November issue of Arizona Medicine as well as the Delegates' Report in the July, 1956 of our Journal.

VETERANS' MEDICAL CARE

The House revised A.M.A. policy on veterans' medical care by endorsing in principle the following paragraph suggested by the Council on Medical Service:

"With respect to the provision of medical care and hospitalization benefits for veterans in Veterans Administration and other federal hospitals that new legislation be enacted limiting such care to veterans with peacetime or wartime service whose disabilities or diseases are service-incurred or aggravated."

This action eliminates the temporary exceptions which were made in the June, 1953, policy regarding wartime veterans who are unable to defray the expenses of necessary hospitalization for non-service-connected cases of tuberculosis or psychiatric or neurological disorders. In making the policy change, the House approved this supplementary statement:

"We recognize the laws and administrative extensions of the law that are now in operation. We feel that under the circumstances it will be to the best interests of the public in general, and veterans in particular, if medical societies, county and state as well as national, develop committees to assist in guaranteeing VA hospital admission to service-connected cases. While the present law exists, we shall help assure that veterans whose illness constitutes economic disaster will not be displaced by those suffering short-term remediable ills which, at the worst, constitute financial inconvenience."

In another action concerning veterans, the House passed two resolutions condemning as unlawful the practice of Veterans Administration hospitals which admit patients who are covered by workman's compensation insurance or by private health insurance and which render bills for the cost of their care. Both resolutions requested the A.M.A. to take action to bring about a discontinuance of such practices by VA hospitals, and one of them instructed the Association Secretary to obtain from each state testimony or records of each known case that violates VA Reg. 6047-D1.

RADIOACTIVE ISOTOPES

The House rescinded the June, 1951, action,

which limited the hospital use of radium and radioactive isotopes to board-certified radiologists, by approving a new policy statement which says:

"(1) In any hospital in which a patient is to receive radium or the products of radium or artificially produced isotopes, there should be a duly appointed Committee on Radium and Artificially Produced Radioisotopes of the hospital professional staff. This committee should include, but not necessarily be limited to, the following qualified physicians: a radiologist, a surgeon, an internist, a gynecologist, a urologist and a pathologist. This committee should have available such competent consultation of other physicians and scientific personnel as may be required by it. Where this is not practicable, the hospital staff should consult the nearest Committee on Radium and Artificially Produced Radioisotopes.

"(2) In any hospital, the use of radium or its products and artificially produced radioactive isotopes for diagnostic or therapeutic purposes shall be restricted to qualified physicians so judged by the Committee on Radium and Artificially Produced Radioisotopes of the professional staff to be adequately trained and competent in their particular use.

"(3) It is recommended that procurement, storage, dosimetry control and inventory of all radioactive isotopes for the use of the hospital staff and radiological safety control be centralized, and, where administratively possible, centralization be located in the Department of Radiology.

"(4) It is recommended that the Board of Trustees assign to the appropriate council or committee the continuous study of the problems of radiological safety control in the use of radium and its products and artificially produced radioactive isotopes for diagnostic or therapeutic purposes."

CLINICAL MEETINGS

Rejecting a resolution which recommended discontinuance of the interim sessions, or clinical meetings, the House adopted a reference committee report which said:

"We believe that the interim sessions should be continued because of the public relations value of these meetings to the Association and the educational value to physicians and the general public in the various geographical areas involved.

"It is the suggestion of the reference committee that maximum attention be given to these potential benefits in selecting a city for the interim meeting.

"It is our further recommendation that the Board of Trustees consider the advisability of holding an Interim Meeting of the House of Delegates in Chicago each November or December and an Interim Scientific Session in November or December of each year in different parts of the United States. The reference committee suggests that the views of the Board of Trustees in this regard be reported to the House of Delegates next June."

HOSPITALIZATION FOR ALCOHOLICS

To implement educational approaches to the problem of alcoholism, the House approved a statement submitted through the Board of Trustees by the Council on Mental Health and its Committee on Alcoholism. The House also recommended that the statement be brought to the attention of the Council on Medical Education and Hospitals, the Joint Commission on Accreditation of Hospitals and the American Hospital Association. It includes the following:

"The Council on Mental Health urges hospital administrators and the staffs of hospitals to look upon alcoholism as a medical problem and to admit patients who are alcoholics to their hospitals for treatment, such admission to be made after due examination, investigation and consideration of the individual patient. Chronic alcoholism should not be considered as an illness which bars admission to a hospital, but rather a qualification for admission when the patient requests such admission and is cooperative, and the attending physician's opinion and that of hospital personnel should be considered. The chronic alcoholic in an acute phase can be, and often is, a medical emergency."

COMMITTEE ON MEDICAL PRACTICES

In approving a progress report of the Committee on Medical Practices, the House amended one of its directives to read as follows in order to remove any legal objections:

"The A.M.A. representatives on the Joint Commission on Accreditation of Hospitals be instructed to stimulate action by that body leading to the warning, provisional accreditation, or removal of accreditation of community or general hospitals which exclude or arbitrarily restrict hospital privileges for generalists as a class regardless of their individual professional

competence where such policies adversely affect the quality of patient care rendered. Any action taken should be only after appeal to the Commission by the county medical society concerned."

The House also approved a recommendation by the Committee on Medical Practices that a study group be formed to consider the best background preparations for general practice, and it urged that such action be implemented as soon as practicable.

MISCELLANEOUS ACTIONS

Among many other actions on a wide variety of subjects, the House of Delegates also:

Urged the widest possible publication and distribution of Dr. Murray's **PRESIDENTIAL ADDRESS** at the opening session;

Pledged the full support of the Association's initiative and energy to President Eisenhower's **PEOPLE-TO-PEOPLE PROGRAM** as a means of promoting understanding, peace and progress;

Directed the Board of Trustees to continue its investigation of the practicability of developing a **STATEMENT OF A.M.A. POLICIES** and to arrange for the periodic publication of revised versions of such a policy statement;

Commended the objectives of the American Association of **MEDICAL ASSISTANTS** and its sincere desire to work closely with the medical profession in improving medical service and medical public relations;

Noted with pride the good work being done by the 74,348 members of the **WOMAN'S AUXILIARY**, as reported to the House by Mrs. Robert Flanders, President;

Directed the Councils on Pharmacy and Chemistry and on Foods and Nutrition to conduct a joint study of all presently available information concerning the **FLUORIDATION OF PUBLIC WATER SUPPLIES** and to present a documented report of findings and recommendations at the December, 1957, meeting;

Urged all physicians to participate actively in the formulation of medical policy for **PREPAID MEDICAL CARE PLANS** which are under physician direction or sponsorship;

Changed the By-laws to extend **SERVICE MEMBERSHIP** to reserve officers on extended active duty with the defense forces and the U. S. Public Health Service;

Changed the By-laws relating to **TRANSFER OF MEMBERSHIP** so that an active or as-

sociate member of the Association who moves his practice to another jurisdiction may continue his A.M.A. membership by applying for membership in the constituent association in his new jurisdiction, subject to a two-year limit on approval of his application;

Changed the By-laws so that the **ELECTION OF OFFICERS** may take place at any time on the fourth day of the annual session, instead of being restricted to the afternoon of that day;

Passed a resolution calling for the American Medical Association to join with the American Hospital Association and the American Institute of Architects in their proposed **STUDY OF HOSPITAL DESIGN AND CONSTRUCTION**;

Approved the principle of a voluntary reduction in the self-assigned **QUOTA OF INTERNS** as printed in the 1956 handbook of the National Intern Matching Program, and

Instructed the Board of Trustees to accentuate cooperation between the American Medical Association and the American Bar Association to the end that a bill of the **JENKINS-KEOGH** type be enacted at the next session of Congress.

OPENING SESSION

At the Tuesday opening session, Dr. Murray, on behalf of the American Medical Association, presented a special citation to Ciba Pharmaceutical Products, Inc., for "the service it has performed to the medical profession and to the nation thru its weekly television series, 'Medical Horizons'." At the same session, the American Medical Association, and four of its constituent societies — California, Arizona, Utah and New Jersey — contributed nearly \$300,000 to the American Medical Education Foundation for aid to the nation's medical schools. The A.M.A. announced another gift of \$125,000, bringing this year's total contribution to \$343,000. The amounts presented from the rostrum of the speaker's stand by representatives of these four states, including your delegate, was California, \$132,981; New Jersey, \$25,000; Utah, \$11,870, and Arizona, \$3,695. The contribution from Arizona next year should approximate \$8,000 or more when membership dues are collected in 1957.

It was a pleasure to represent Arizona again in the A.M.A. House of Delegates at this session.

Respectfully submitted
J. D. Hamer, M.D.
Phoenix, Ariz.

12/3/56

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Organization PAGE

CIVICS

By Norman A. Ross, M.D.

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"As your preceptor I consider my responsibility now to teach you the art of healing. Many graduates have found that it takes them ten years to see patients as other than specimens once they have convinced themselves of THEIR diagnosis. Your professors have warned you of this, probably only presenting the one example, heart disease. In heart disease they have told you never to make a heart diagnosis or present a prognosis on one call. People here, today, are conversant with other medical problems and fearful of other disease than heart disease. Before you have attained my age and experience you will see more lay medical agencies than you now can imagine. You will join them, too. I would say the same thing as did your professors but in somewhat different words — treat more damn-if-I-know — and you will be a better diagnostician, a better physician and a better citizen." (Phoenix, Arizona, 1929)

American men of medicine today with present scientific advances, joiners that we are, still do not promise cure. Medicine continues as the healing art.

On Saturday, November 24, 1956, at 2:30 P. M., in Tucson, Arizona, we attended a meeting of physicians representing the three states of Mexico: Sinaloa, Sonora, and Jalisco; and the State of Arizona; a meeting endorsed by the Governors of the states of Sinaloa, Sonora, Jalisco, and Arizona, and presided over by Harry Thompson, M.D., Arizona, U.S.A., and Hector Gonzalez Guevara, M.D., Mayor of Mazatlan, Republic of Mexico. The following physicians were in attendance, their official capacities are listed after their names:

Representatives from The Republic of Mexico
 Dr. Hector Gonzalez Guevara, Mazatlan, Sinaloa, Co-Chairman, representing Dr. Rigoberto Aguillar P., Governor of Sinaloa.
 Dr. Gaston Madrid, Hermosillo, Sonora, representing Dr. Alvaro Obregon, Governor of Sonora.
 Dr. Guillermo Soberanes, Hermosillo, Sonora, representing Dr. Alvaro Obregon, Governor of Sonora.
 Dr. Jose Ma. Licona, Hermosillo, Sonora, representing The Federation of Sonora Doctors
 Dr. Javier Maldonado Avil, Navojoa, Sonora.
 Dr. Alberto L. Guevara, Zoquipan, Jalisco.

Dr. Jesus Martinez Ochoa, Nogales, Sonora.
 Dr. Ernesto Rivera Magallon, Magdalena, Sonora.
 Dr. Juan Jose Vasquez Romo, Hermosillo, Sonora.
 Dr. Umberto Rosas, Navojoa, Sonora.
 Dr. Carlos Silva, Navojoa, Sonora.
 Mr. Alfredo Patron Rivas, Mazatlan, Sinaloa, in charge of arrangements.

Representatives from Arizona, United States of America
 Harry Thompson, M.D., Tucson, Co-Chairman.
 Norman A. Ross, M.D., Phoenix, representing Ernest W. McFarland, Governor of Arizona.
 Frank W. Edel, M.D., Phoenix, President, Maricopa County Medical Society.
 Joseph Madison Greer, M.D., Phoenix, representing the Arizona State Medical Society.
 Charles Kalil, M.D., Phoenix, representing Maricopa County Medical Society.
 Miguel A. Carreras, M.D., Tucson.
 Manuel Soto Curiel, M.D., Tucson.
 Robert Hastings, M.D., Tucson.
 Leo Kent, M.D., Tucson.
 Wilkins R. Manning, M.D., Tucson.
 Salvador Rodriguez, M.D., Tucson.
 William G. Shultz, M.D., Tucson.

Here was something different, something refreshing after so much of local lay association meetings, medical societies, and staff meetings. Here we met members of our profession from what to us was another world, Old Mexico.

Coccidioidomycosis was the paper delivered by Dr. Alberto L. Guevara, Zoquipan, Jalisco, formerly a professor of medicine at the Northwestern University Medical School, Chicago, U.S.A. The good doctor discussed "coccy". He mentioned the fact that cases of coccidioidomycosis, Arizona's and California's private disease, were much too common in his state, that one case had been reported in Argentina, that the disease was being disseminated and is now found in other areas of the United States as well as other than desert areas in Mexico. We learned that what we had considered to be the Great American Desert stopping at our southern border, is on Mexico's maps the Sonora Desert which included our state and California, as well as several states of Mexico. These men consider coccidioidomycosis to belong to Arizona, California, and several states of Mexico. They don't cure "coccy" in the Republic of Mexico.

At breakfast the next morning we talked to my colleagues and to their wives, realizing for the first time the similarity, yet the difference in medicine in two worlds.

Hector Gonzalez Guevara, is Mayor of Mazatlan. Doctors in Mexico hold an exalted



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position. Definitely the mayor of Mazatlan was a leader, capable of leading as smug an American as you would wish to produce. The mayor's lady conversed in English.

Is there, then, in these two great countries, practically one world of Medicine? Do we diagnose and treat illness the same? Do we practice the healing art with only language and customs dividing us? Was the difference a social one? This was a topic of discussion on our trip home.

There will be a society international, of this I am sure. Another organizational meeting will be in Hermosillo in March, 1957. The first regular meeting of the Society is set for the latter part of May, 1957, in Mazatlan.

Mazatlan in Mexico. A Mexican physician of remote Portuguese extraction, for a moment I felt myself an Arizona physician of Iowa extraction, told us this: "Mazatlan, Old Mexico — on an island here are to be found burro deer, so named because they resemble the burro but for a huge spread of antlers; fish — "theek" — in May you can hardly row a boat through them, the motor at times is started to nudging the larger ones aside."

Short five minute papers were suggested because of language difficulty and my new friends interposed that one might drink, or leave during portions of the discussion, time off to allow for interpretation. He offered that this could not be considered impolite.

Could our proposed organization develop into a world medical organization; or would it treat only with our immediate neighbors? This posed a question which America recognizes at least in part in licensure of physicians. Is medical training, clinical medicine, basically the same the world over?

Does medicine as the American practicing physician knows it today, differ only in its social and economic application? Should Arizona physicians now communicate with their colleagues, neighbors, to the South, in Sinaloa, Sonora, and Jalisco? Do we want an association with the Mexican physicians? Would such an association be profitable to our patients? Would it be pleasurable?

Ask patient, ask preceptor, ask professor if you wish, or take our advice and write Harry Thompson, and joiners — join us — "muy pronto."

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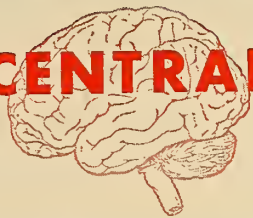
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Prenatal X-rays Indicted As Possible Cause of Cancer in Children

A RECENT press release may soon be bringing many questions and comments from pregnant women to the physician who is caring for them. An English study carried out by Dr. Alice Stewart of Oxford University has indicated from preliminary analysis that prenatal x-ray may play an etiological role in the development of malignancy in children. This study was a survey of 1500 English children who died before the age of ten from leukemia or malignancy between 1953 and 1955. At the time of the preliminary press release, 547 fatalities had been analyzed. Of these 85 mothers had had diagnostic abdominal radiation during the relevant pregnancy.

One's comment is that this may be an interesting lead and worthy of investigation. Certainly her study to date is not conclusive and the apparent increase of incidence of malignancy during the relevant pregnancy as against a controlled group could be due to many things. It appears unwise to release preliminary information of this type to the lay press.

E.E.Y.

The A.M.A. and American Legion Joint Committee

THE FINAL report of this Committee which was discharged in February of 1956 was sent to the A.M.A. and to the American Legion. The Committee on Federal Medical Services of the A.M.A. has studied the report and has issued a statement in which it indicates that it is the Committee's opinion that the A.M.A. and the American Legion should continue to cooperate in an effort to provide finest medical care for all segments of the American public, but has indicated that it has found no reason to suggest revision of the fundamental American Medical Association concept that it is contrary to the public interest to approve V.A. medical care for disability unrelated to military service. It has indicated that it feels, as a consequence of this, that those suggested areas of understanding which conflict with this position cannot be endorsed.

R. Lee Foster, M.D.

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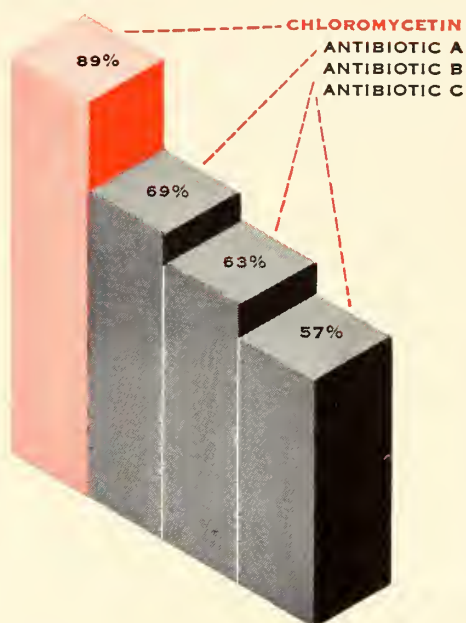
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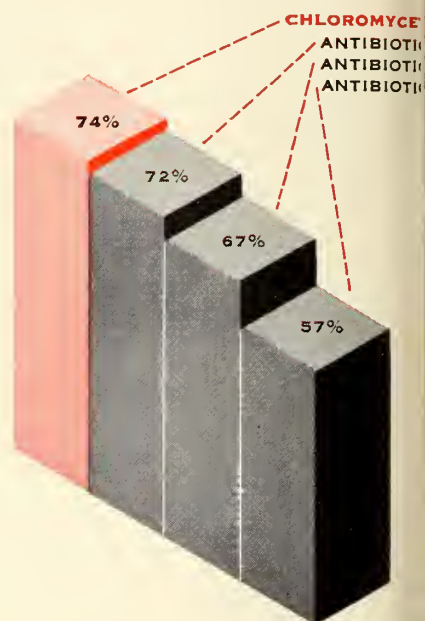
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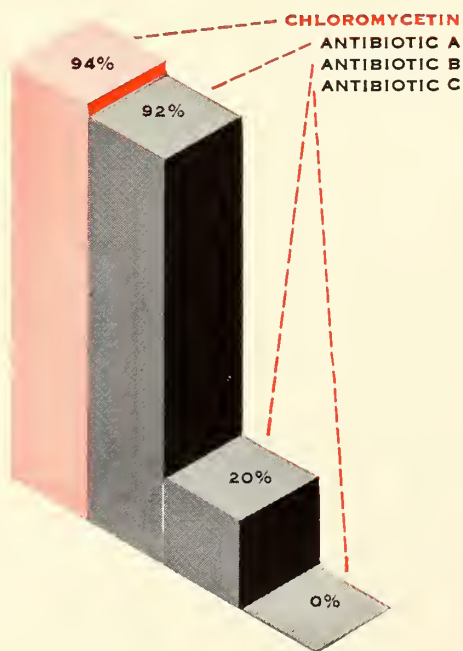
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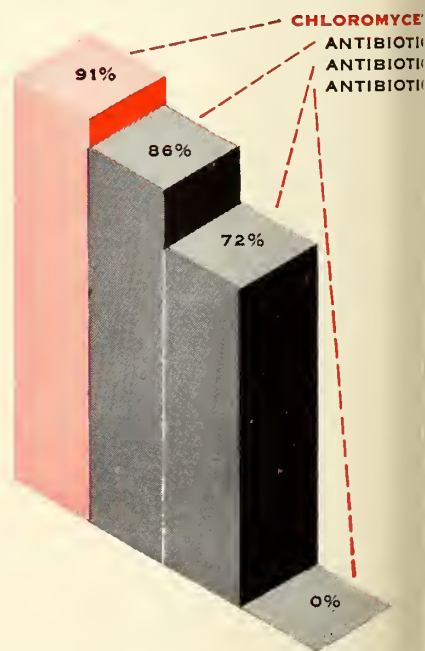
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Journal of ARIZONA MEDICAL ASSOCIATION

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THE PATHOGENESIS OF JAUNDICE IN EARLY LIFE

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THE PROBLEM of neonatal jaundice is a complex one but it has now lost some of the confusion which had existed concerning it. Protection of the neonatal brain by prevention of hyperbilirubinemia through the use of exchange transfusion is the prime objective in the management of neonatal jaundice.

The basic factors in the production of jaundice at any age are, excessive destruction of red blood cells, injury to liver cells and obstruction to outflow of bile. The underlying mechanisms which bring one or the other of these basic factors into operation with such disorders as erythroblastosis, sepsis or atresia of the bile ducts are well understood. Acquired hemolytic anemia, congenital spherocytosis and other entities which more commonly affect adults are also well understood as rare causes of jaundice in infants. With all of the common and uncommon entities considered there remains a significant group which is of uncertain etiology. The cases which make up the latter group usually fall into one of two broad categories — "physiological" jaundice and hepatitis.

Although the prime consideration so far as protection of the brain is concerned is the prevention of hyperbilirubinemia and this is accomplished by exchange transfusion, differential diagnosis is also necessary in order that specific therapy, when indicated, may be instituted.

Differential diagnosis may be difficult because: (1) hemolytic disease of the newborn cases may be complicated by obstructive features; and (2) hepatitis in infancy may frequently present with signs suggesting complete obstruction in-

cluding pale stools and absence of urobilinogen in the urine; (3) liver function tests are often inconclusive in the newborn. However, it is rare that one is unable to arrive at an accurate diagnosis upon which therapy may be founded.

The relative frequency of occurrence of the different entities which result in early neonatal jaundice is a changing one. Obstruction is not a common cause but congenital atresia is still confused, occasionally, with jaundice due to sepsis, erythroblastosis or viral hepatitis. Syphilis, once a prominent cause is now a rare one. It is not possible to list the causes in a fixed order of frequency of occurrence but such a list would vary little from the following: "Physiological" jaundice, Hemolytic Disease of the Newborn, Sepsis Neonatorum, Hepatitis, Obstructive Jaundice (Atresia, Plugging of ducts), and others.

Sepsis is sufficiently common that it and Hemolytic Disease of the Newborn could well be reversed in frequency in many localities. Also whether hepatitis or atresia is more frequent might well depend upon case material.

"PHYSIOLOGICAL" JAUNDICE

This is not an entirely benign process as evidenced by the demonstration of kernicterus in premature babies with severe "physiological" jaundice(1). Certain facts concerning the "physiological" form helps in the understanding of the problems presented by some of the other forms of jaundice. Some of these facts are:

1. Although only three times normal amounts of bilirubin is formed during the first ten days

of life(2) the immature liver is unable to excrete it fast enough to prevent indirect reacting hyperbilirubinemia.

2. The liver is functionally very immature at birth. It excretes bile at a rate of only 1 to 2% of the adult liver.(3) Physiological involution of the liver due to loss of the arterial blood from the umbilical veins may play an important part in this immaturity of function but this is not proved.(4)

3. The more immature the baby the higher the bilirubin in the blood is apt to reach. Mature babies often reach 7 mg./100 ml. while premature babies often have levels of 12 mg./100 ml.(5)

It is evident then, that in the immediate post-natal period the liver is presented with an increased load of bilirubin due to the rapid break-down of red blood cells. The liver is often unable to clear the plasma of this excess and this defective function is directly related to the degree of immaturity of the infant. Though the jaundice which results is usually mild and of no clinical significance the term "physiological" is inaccurate and falsely implies complete innocence.

HEPATITIS

The gain in the better understanding of "physiological" jaundice has been accompanied by the recognition that hepatitis is not rare in infancy. This is in spite of the fact that infectious hepatitis (virus A) is a very rare complication of pregnancy(6) and in the cases in which it has occurred the infants have not been affected.(7)

On the other hand the virus of serum hepatitis (virus B) occurs in the serum of 0.2 to 0.5% of the population and it has been shown that transplacental transfer of serum hepatitis from an apparently normal mother to the fetus may occur. This is well documented in a reported case. The serum of the normal mother and the serum from the affected baby each produced hepatitis when injected into human volunteers.(8) The mother gave no history of jaundice. This baby was one of 12 infants in whom jaundice began shortly after birth. All of these infants showed the same changes when examined at necropsy. The changes in the liver were those which have been described by other authors as giant cell hepatitis.(9) Eight additional cases with similar findings are described

by Bowden and Donohue.(4) It may now be concluded that giant cell hepatitis may result from transplacental transfer of the A & B viruses of hepatitis. The familial incidence of giant cell hepatitis, it has been suggested,(10) may be on the basis of carrier mothers. Giant cell hepatitis is a definite morphological entity and can be caused by viruses A & B but it is not yet clear whether or not it may have other causes.

Hepatitis in infants may be caused by other known viruses. The virus of herpes simplex(11), (12) and that of cytomegalic inclusion disease(13) belong in this category.

Toxoplasma is a rare protozoan cause of neonatal jaundice(14). This is a congenital disease which results from transplacental transfer from a carrier mother. More and more cases are being recognized.

HEMOLYTIC DISEASE OF THE NEWBORN

These cases are the result of iso-immunization and include the Rh-Hr system, the ABO system and other rarely active antigens. The cause of the jaundice in erythroblastosis fetalis is the greatly increased destruction of red blood cells which have been damaged by the coating antibody. These infants are not jaundiced at birth because the mother has excreted the excess of bilirubin. It is in this group that a close watch for the appearance of jaundice is necessary if kernicterus is to be prevented. Icterus often appears within the first few hours. In our experience levels of 5 or 6 mg/100 ml. of serum and sometimes higher have been reached before skin jaundice is observed. The earlier jaundice appears the more probable it becomes that dangerous bilirubin levels will follow.

When the use of exchange transfusion is delayed beyond the time when the indications are present (a level of serum bilirubin of 4 mg/100 ml. at birth or 6 mg/100 ml. at 4 hours of age or 10 mg/100 ml. at 12 hours of age) then, more than one exchange is apt to be necessary. Also, when hyperbilirubinemia persists the bile canaliculi in the liver may become plugged with bile pigment — "bile thrombi" — and the signs of obstructive jaundice supervenes; the stools lose their color, bile appears in the urine and the bilirubin in the blood shows a rise in the direct reacting fraction. This is called the inspissated bile syndrome. The jaundice may last for 3 or 4 months and may be confused

with other types of obstructive jaundice. This complication is rarely a factor during the critical first day of life but after the first day the serum bilirubin should be determined as both direct and indirect reacting forms so that should the indirect component approach 20 mg/100 ml. in a mature baby, or 15 mg/100 ml. in a premature baby at anytime during the first week of life exchange transfusion can be carried out.

SEPSIS

Sepsis is a cause of equal importance with isoimmunization with which it also vies as a cause of kernicterus. It should always be suspected in cases of neonatal jaundice when the Coombs test is negative. Jaundice from this cause is usually a little more tardy in its appearance than jaundice due to isoimmunization. The organism commonly at fault is *E. Coli* and the portal of entry is usually the umbilicus. These infants may show few or no signs of infection. Since there may be no reminder in the form of symptoms, it must be kept in mind in the differential diagnosis.

OBSTRUCTION

Obstruction due to congenital stenosis or atresia is perhaps more important in differential diagnosis than it is as an entity. Atresia is uncommon while the causes of jaundice with which it may be confused are common. This statement is especially true when dealing with early neonatal jaundice. Even in the cases of prolonged jaundice of the newborn about 15% are due to erythroblastosis fetalis complicated by the inspissated bile syndrome and about half of these have been mistaken for atresia of the bile ducts.(15) Cases of sepsis of the newborn make up another group, a significant number of which are mistaken for atresia. Infectious hepatitis in infants notoriously gives signs of obstruction (due to swelling and blocking of bile canaliculi). Atresia of the bile ducts is a very difficult diagnosis to make and must be made by exclusion.

Isoimmunization, sepsis and hepatitis must be thought of and excluded before the diagnosis of atresia is made. The conclusion that obstruction is due to atresia should be made only after observation up to 60 days. In this condition the serum bilirubin rises slowly and steadily without variations; the indirect and direct fractions are of approximate equal value; the flocculation

tests are normal; no bile is present in the duodenum; and there is no urobilinogen in the urine. Exploration should be delayed until the above data are complete.(17, 18)

The term — inspissated bile syndrome — is confused in medical parlance. Used first to define intrahepatic obstruction of bile canaliculi in hemolytic disease of the newborn, it is now used also by surgeons to designate extra-hepatic bile duct obstruction by mucous plugs. This confusion limits the usefulness of the term.

OTHER CAUSES

Congenital spherocytosis, manifest at birth, is not excessively rare. Our experience has included six cases in one year. Because of the spherocytosis these cases may be confused with ABO hemolytic disease. But to think of it is to diagnose it. During neonatal crises of this disease it may become necessary to do exchange transfusion in order to maintain the pre-operative bilirubin at a safe level.

Acquired hemolytic anemia (auto-immune hemolytic disease), active at birth, is quite uncommon but cases are recorded. The Coombs test is positive and the problem, including the necessity of maintaining the serum bilirubin within safe levels, is essentially that of the iso-immune form of hemolytic disease of the newborn except that the possibility of aid from the steroid hormones is greater and splenectomy, after a period of observation, may occasionally be considered.

Congenital non-spherocytic hemolytic anemia is an entity which may manifest itself at birth. Patients with this disease are not benefited by splenectomy. We have observed an infant suffering from this disease and the child remains jaundiced at 4 years of age.

Congenital non-hemolytic jaundice is a familial disease which is the result of an inherited inability of the liver to excrete bilirubin. When it is manifest immediately after birth the hyperbilirubinemia may result in kernicterus(15).

Another cause of prolonged neonatal jaundice is galactosemia. Jaundice is not an essential part of this disease but it may develop because of the cyto-toxic effects of galactose on the liver. The icterus has been described as a prolongation of the "physiological" jaundice. To diagnose it is to save a baby from abnormal development and mental retardation(19).

SUMMARY

Hemolytic Disease of the Newborn and Sepsis are discussed as the common causes of early neonatal jaundice. Bile duct obstruction, hepatitis and rarer causes of newborn jaundice are considered with differential features. Notes on "physiological" jaundice are included. The premise is outlined that the physician managing jaundice in the early neonatal period is obligated to prevent hyperbilirubinemia with its attendant danger of kernicterus through the timely use of exchange transfusions.

701 Mason Street

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THE DOCTOR AND THE COURT

Robert S. Tullar*
Tucson, Arizona

FEW REALIZE how intimately the medical profession is connected with the administration of justice. Most doctors freely express the desire to stay as far away from the courtroom as possible. But members of the medical profession do appear in Arizona courtrooms every day, and their influence is felt in countless instances, even where they do not actually testify before the jury.

The great bulk of civil litigation these days arises out of personal injury sustained by auto mishap. In even as small a state as Arizona, many thousands of dollars are paid out every day to compensate for expense, pain and suffering sustained in this type of case. More than 90% of this is by compromise and settlement made before the case is presented to the jury. The alleged negligent driver is usually insured and it is, of course, the insurance company which is primarily concerned in his defense.

There are two issues in the personal injury case — legal liability and extent of injury. The former is a question of fact and law with which the doctor has, or should have, no concern. Usually there is sufficient doubt about this issue that the court will permit the jury to determine the question. This means — at least to the pessimistic lawyers representing the insurance companies — that the jury will almost surely resolve the doubt in favor of the injured plaintiff.

As a practical matter, then, the importance of the issue of legal liability is greatly minimized. We see instances every week where insurance companies pay out substantial sums in settlement even though they are morally certain that there is no legal liability. The reason for this is that they feel it is cheaper to settle than to defend, or else they feel that they would rather not risk an adverse verdict for a much larger amount at the hands of a sympathetic jury and, perhaps, a sympathetic judge.

Many students of the system feel that the only logical destination to be reached by this kind of thinking is the total elimination of the question of legal liability, and the mere assess-

ment of compensation by a board or commission, like the compensation award the injured workman now receives from the Industrial Commission.

This suggestion has been raised here only to emphasize the importance of the second aspect of the case, the extent of injury. This is the aspect where, it is plain to see, the injured person, his lawyer, the insurance company, and, by extension, all of us who pay insurance premiums, are all dependent upon the doctor in the case and the opinions he expresses. It will be assumed that the doctors who treat the potential plaintiff patient are conscientious, competent and busy. The internist, the pathologist, the roentgenologist, the anesthesiologist, and the surgeon, each plays his part. There is little thought of subsequent litigation at the early stages of the case.

The day comes, however, when the patient's lawyer appears in the doctor's waiting room — usually without appointment — and says, "Doctor, please tell me all you know about this case." After this, he will ask for a written report, made in as much detail as possible. This report, probably made available to both sides in the case, may very well be the foundation for settlement, particularly if previous experience has demonstrated the competence and objectivity of the maker of the report.

In cases where the injuries are grievous, or where there is a claim of permanent injury, however, the defense will probably hire its own medical expert, whose report will, in turn, be made available to the plaintiff. If the reports from the two sides are in substantial agreement, the probability of settlement is great. As to describing the injury, the action taken to repair it, the probable amount of pain and suffering, and the reasonable cost of repairs, the area of dispute is small.

There are three important areas, however, where disagreement more often arises, and it is in these areas that large amounts of money ride on the expert medical opinion. They are, first, the extent of future disability, expense, pain and suffering; second, the genuineness or seriousness of subjective complaints that can-

*Appointed Superior Court Judge in Pima County, 1951; elected 1952; reelected 1956; president Arizona Judges' Association, 1956-1957.

not easily be proved or disproved; and, third the aggravation or reactivation or pre-existing injury or disease.

It requires a great amount of money to compensate a young wage earner who has been permanently and totally disabled. So when the patient's doctors say that he will never be able to work again, and the insurance company's doctors say he will soon be in just about as good shape as he ever was, there is a likelihood that they are going to have to state their opinions to the jury, and permit the reasons for their opinions to be searched out by cross-examination.

When the patient's doctor testifies to the existence of a cervical-brachial syndrome, and expresses the opinion that his patient is not exaggerating when she describes excruciating pain, while the defendant's doctor states he can find nothing objective to support patient's claim, adding that he is of the opinion that \$5,000 would immediately banish all pain, the case may well be headed for the courtroom.

And lastly, and perhaps most difficult of all, the court and jury are likely to hear about it when the plaintiff's doctor says that the injury awakened a quiescent case of Buerger's disease or tuberculosis, or speeded up the degenerative changes in the spinal processes, while the opposing opinion is that the circulatory system was already so deteriorated that the patient was seated over a lighted and gangrenous fuse, or that a thoracoplasty was indicated long before the accident, or that the pain in the back was due wholly and solely to the wearing off of the edges of the vertebrae by the passage of time, and not by the collision of two motor vehicles.

Even in these three fields lawyers and clients will often find room for compromise, but frequently the doctor will be told to get ready to testify. This should not be disturbing news. Because they are dependent upon the doctor's good will, not only for this case, but also for the next, and because they are aware of the busy doctor's problems with regard to time and schedule, the lawyer and the judge will exert every effort to accommodate the doctor. Although he is subject to subpoena, and can be made to appear and wait like all citizens, it is invariably ascertained in advance at what time it is most convenient for the doctor to

appear. When that time arrives and the doctor walks into the courtroom, by agreement of counsel he is put on the witness stand at once, even though it be out of order. His testimony is taken with as little delay as possible, and he is thereupon excused. And despite his extreme reluctance to appear at all, he usually finds that he has enjoyed a stimulating experience which he is glad he didn't miss.

Occasions have arisen where doctors have been subpoenaed and forced to wait. These have been extremely rare and are due to the inexperience or lack of understanding on the part of plaintiff's lawyers. They could have been avoided had the doctor apprised the judge of the situation. On the other hand, on equally rare occasions, the doctor, without excuse, has arbitrarily refused to respond to the processes of the law, has failed and refused to appear, and has forced cases to be postponed or dismissed. The judge who did not punish for this contempt of court would be as derelict in the performance of his duty as the doctor was in his.

There are now, at least in the two larger counties in Arizona, joint committees of the medical societies and bar associations, to whom any complaints of this nature may be referred and expeditiously handled.

When the doctor takes the witness stand veteran court observers always watch with interest. As an expert witness, his testimony is given great consideration. The plaintiff is naturally expected to say she hurts, and the defendant is expected to say he really didn't hit her hard at all, and those self serving statements are passed by without making too much impression. But the doctor who testifies calmly and dispassionately, without any apparent interest in the outcome, as to what was broken and what was torn, what was mended and what can't be mended, makes a great impact, not only upon the jury, but on all who listen. This testimony will be believed, and these opinions respected.

Many plaintiff's doctors have a natural sympathy for their patient. They know how much she has suffered, and they want to see a generous award in her favor. Not infrequently the plaintiff is indigent, or nearly so, and there is no hope for the doctor to be paid for the many, many hours of work he has put on the case unless the jury helps him out. While this

will not affect the honesty of the doctor's testimony, it may well affect the enthusiasm which he betrays for the plaintiff's case. This can be dangerous. Some doctors, in trying to help, have even attempted to suggest to the jury why the defendant must have been negligent to have inflicted this terrible injury.

On the other side of the coin, there are doctors who tend to belittle any complaint the validity of which cannot be proved by laboratory test or x-ray. It seems that defense lawyers like to use surgeons, and particularly orthopedic surgeons, as their expert witnesses for this reason. Whether there is something in the training or experience of such specialists that justifies the generalization that they tend to be favorable to the defense is doubtful.

The fact is, however, that the doctor who states what he knows in a let-the-chips-fall-where-they-may manner, and who states the opinions that he feels qualified to express from the facts he knows to be true, neither unduly stressing the favorable points, nor unduly minimizing the unfavorable, is the doctor who will best do his job in the courtroom, and will best further the cause of justice.

After the doctor has stated his case on direct examination, he is subjected to cross-examination by the attorney on the other side. Many doctors worry about the traps that may be laid, or about what they inadvertently may be led to say. Often they are indignant, perhaps because the lawyer persists in using medical terms he doesn't know the meaning of, or because he asks questions that are so ambiguous or unintelligible that a straight answer is impossible, or because the lawyer betrays such an abysmal ignorance of the subject that it is impossible to communicate with him.

In some cases the indictment is justified, but the doctor needn't worry, for the jury will discover incompetence as soon as he does. The apparent ignorance of some lawyers, however, is not always genuine. They may merely be putting themselves in the shoes of the medically uninformed juror and, perhaps, be seeking to get across the point that a cervical-brachial syndrome is nothing more nor less than a pain in the neck.

As a matter of fact, when the lawyer commences to cross-examine the doctor he is sitting on a much hotter seat than is the doctor. He must ask himself, "What can I do to help my case by this cross-examination?" If the doctor has in no way overextended himself on direct examination, if he has expressed only opinions for which he has sound grounds, if he has stayed strictly in his own field, if he has, in short, told only what he knows, and not what he merely suspects or hopes, the chances are that the lawyer would do well to forego cross-examination.

Cases are brought asking for damages for injuries that never existed, or for injuries that occurred from some cause other than the accident complained of. Plaintiffs may exaggerate the seriousness of their injuries, and sometimes there is no better cure than a favorable jury verdict. But by and large people are honest and state their claims as honestly as they can. The insurance companies, furthermore, recognize that it is their duty and obligation to pay just claims, and they are willing to do so. The quality and fairness of the medical testimony, then, in the last analysis, is the measure of the justness of the result.

Doctors, just like our lives and health, our fate in court is in your hands.



MYCIN — SCHMYCIN

By Robert J. Antos, M.D.
Phoenix, Arizona

SPIRAMYCIN, Amecitin, Cathomycin, Oleandomycin, Sigmamycin! Do you feel like tearing out your hair, exclaiming, "Mycin, Schmycin! Will it ever make sense?" Cheer up, even the experts are confused. They now have to hold yearly antibiotic conferences in an attempt to peer through the smog of agents of antibiosis. This report is an attempt at hitting only the high spots of the present state of confusion that now exists.

Your editor asked to have submitted a list of the newer antibiotics with appropriate comments to clarify the confusion caused by duplication and dissimilar trade names. After wading through multiple reports, my appropriate comments would be unprintable. So I have narrowed this to two parts: a report of what's been going on, and a list of the multitude of antibiotics (with a minimum of appropriate comments).

Someone by the name of Pickerell (*Lancet*, July 14, 1956, page 101) published an interesting report concerning the "H-bug". This is the New Zealand name for 'Hospital epidemic antibiotic-resistant staphylococcus'. Someone in this country came up with the term 'Nosocomial'. According to the dictionary, this is an obsolete term meaning "applied to disease caused or aggravated by hospital life".

This report of Pickerell's was not the first of this type. Several have been published in the past year or two. But Pickerell's paper is the first one that covered a large group of patients. In this report were the results of some common sense precautions undertaken to combat the 'H-bug'.

In a children's hospital, where these antibiotic resistant staph became a problem, certain strict regulations were enforced. Antibiotics were forcibly held to a minimum, reminiscent of the penicillin rationing of 1943 or thereabouts. Infants were handled only by their mothers (to whose organisms the babies have immunity), and each room was thoroughly scrubbed between patients. Antiseptics were restricted to a minimum because of their damage to infant tissues. The effects were not immediate. They had grumblers and physicians who refused to comply. But they beat them down eventually.

Finally after several months, the incidence of 'H-bug' began to decline. The reduction was steady until after one year of this program this Nosocomial scoundrel is again a rarity at this institution.

It was reports similar to this that started all this fuss over new antibiotics. It just happened that several of them were promoted almost simultaneously during the past couple months. In mid-October was held the fourth annual symposium on antibiotics in Washington, D. C. There was strong disapproval of the principle of combining two or more antibiotics for the purpose of delaying the development of resistant organisms. In fact the highlight of this meeting was the panel discussion on resistant strains of microorganisms.

All but two of the eight panel members stated in various ways their strong disapproval of the principle of combining two or more antibiotics for the purpose of delaying the development of resistant organisms. It was agreed that such a combination cannot be effective for this purpose unless the organism is sensitive to both or all the antibiotics used in the combination. If the organism is resistant to any one of the antibiotics in the combination the only value of the combination lies in the effectiveness of the antibiotic to which the organism is sensitive. They do not concede that clinical synergism has been demonstrated in the combinations of antibiotics under consideration.

While increasing concern was expressed over the emergence of resistant strains, the panel felt that the answer to this situation lies not in combining antibiotics but rather in discontinuing the abuse of antibiotics already available, and in observance of the basic principles of asepsis and antisepsis. In fact toward the end, the panel members forgot all about antibiotics in a lively discussion of septic hands, blankets, masks, floor mops, etc.

If one goes back far enough, the same story with different names came up when the sulfonamides were first put into multiple combinations. A few years later the marriage of sulfonamides and penicillin stirred the ire of some. More recently the combination of penicillin and

streptomycin did likewise. Since then, we have been offered other combinations with mixed opinions as to their value.

The mixtures of the newer 'cyclines' and mycins is just another phase in this same story; there will be more combinations to come in future years. We do not attempt to praise them nor condemn them. Here we shall give you a brief discussion of some of the preparations under study and finally wind up with a list of those currently available commercially.

OLEANDOMYCIN (Pfizer) — Penicillin-like spectrum. Like all new antibiotics in this category it is effective against some resistant staphylococci. In doses of 3 Gm. daily there were failures in the treatment of gonorrhea which you would not find with penicillin. If this antibiotic were as good as penicillin, one would expect it to be marketed to compete with penicillin.

SIGMAMYCIN (Pfizer) — Combination of 167 mg tetracycline and 83 mg Oleandomycin per capsule. The dose is 1 or 2 capsules q.i.d. with meals or a glass of milk. (?) Could it be they anticipate the stomach lining will be discom-boluted?

This dosage and proportion would give only $\frac{2}{3}$ the usual daily dose of tetracycline. The claim is made that there is "synergistic" action that delays emergence of resistant staph. However, this claim is based on test tube experiments, pictures of which you have already received in mail advertisements.

Here is some food for thought. Since Oleandomycin has essentially a penicillin spectrum and tetracycline is a broad spectrum antibiotic, nothing is going to affect the organisms outside the penicillin spectrum except the dose of tetracycline given. Nothing is mentioned or even hinted about the synergistic action on the organisms which are not affected by Oleandomycin. We must reserve judgment on this one.

PENICILLIN V — Clinical reports on penicillin V continue to be disappointing. Despite the "high" blood levels, which really are not too significant, it has not yet established any superiority over oral penicillin G — in fact, clinically when given in equal amounts, penicillin V is inferior. To get comparable results, the dosage of penicillin V must be higher than those commonly with penicillin G. Actually, it has been recently shown that plasma binding of penicillin V is much higher than that of

penicillin G, and this higher plasma binding far offsets the so-called higher blood level.

VANCOMYCIN (Lilly) — Penicillin-like spectrum. This has been found very active against resistant staph. Up to now it must be given I. V. and is very insoluble. It is very irritating to tissues and may have renal toxicity.

NOVOBIOCIN (formerly Streptonivcin) — Various forms. (See list at end of article). Penicillin-like spectrum, but not as good as penicillin against many penicillin sensitive organisms. Skin reactions very high (40%). Should be restricted to resistant staph.

BRYOMYCIN (Bristol) — Supposedly a new and better form, but is same as Novobiocin.

RISTOCETIN (Abbott) — They claim superiority, too, but it's still Novobiocin.

THIOSTREPTON (Squibb) — Penicillin-like spectrum. Thought by some to be the most active, but it is so insoluble as to be impractical at this time.

SPIROMYCIN (Sharp & Dohme) — A weak cousin to Novobiocin.

AMPHOMYCIN — Very little information. Sounds like an "also ran" with a weak penicillin-like spectrum and action.

There are some miscellaneous antibiotics with "narrow band" spectra.

AMPHOTERCIN B — inhibits candida and histoplasma.

NYSTATIN (Squibb) — inhibits candida.

MYSTECLIN (Nystatin & Tetracycline, Squibb) inhibits candida.

AMEBOCIDE (Squibb) — inhibits histoplasma.

AMECETIN — A streptomyces derivative which proved a failure in acute leukemia (only one report so far).

ASCOSIN — Reported useful in tinea capitis.

CYCLOSERINE — Clinical trial in tbc gave equivocal results; toxicity has been confirmed.

XANTHOCILLIN — Effective against PROTEUS with or with Tyrothricin. It may be that this is what was formerly known as penicillin X and Y from the mycelia of **PENICILLIN NOTATUM**.

PANTOTHENATE SALTS OF STREPTOMYCINS — reported as less toxic by some; others state they are just as toxic as the sulfates.

FURADANTIN — This belongs in a group by itself. But we have first hand experience wherein I. V. Furadantin has proved life saving

in bacteremia caused by organisms resistant to all antibiotics. In several cases of bacteremia due to *AEROBACTER AEROGENES* — I. V. Furadantin was especially efficacious when all else failed.

FUROXONE — Another nitrofuran compound. It is effective orally and has the ad-

vantage of not being protein bound. Evidence is piling up that side effects are minimal and that it is effective against gram-negative organisms. *In vitro* it has good activity against systemic infections including antibiotic resistant *Staphylococci*, *Salmonella typhosa*, and *Klebsiella pneumoniae*.

CONDENSED LIST OF ANTIBIOTICS

Generic Name

Penicillins — Crystalline — Penicillin G or O

Penicillin-V

Procaine — Penicillin G or O

Benzathene

Penicillin G

Streptomycin, dihydrostreptomycin, alone or in equal mixture.

Penicillin and

Streptomycin combinations

Tetracyclines

Chlortetracycline

Oxytetracycline

Tetracycline

Calcium di-oxytetracycline

Erythromycin

Chloramphenicol

Novobiocin

(from *streptomyces niveus* and *S. spheroides*)

Spiramycin

Oleandomycin

(from *streptomyces antibioticus*)

Amecitin

A Streptomyces antibiotic

Pen-M

Furadantin I. V.

Furoxone

Trade Name

Too numerous to list.

V-Cillin (Lilly) Pen-V-Oral (Wyeth)

Too numerous.

Bicillin (Wyeth)

Permapen (Pfizer)

Numerous

Combiotic (Pfizer)

Crysdimycin (Squibb) Durycin (Lilly)

Pen-Duostrep (Merck) S.R.D. (Parke, Davis)

Aureomycin (Lederle)

Terramycin (Pfizer)

Numerous

Achromycin (Lederle) Tetracyn (Pfizer)

Panmycin (Upjohn) Steclin (Squibb)

Polycycline Terrabon (Pfizer)

Erythrocin (Abbott) Iloeycin (Lilly)

Erythromycin (Upjohn)

Chloromycetin (Parke, Davis)

THE "NEWER" ANTIBIOTICS

Albamycin (Upjohn)

Cathomycin (Merck)

Cordelmycin (Pfizer)

A sleeper as yet similar to but not so good as novobiocin. (Sharp & Dohme)

Matromycin (Pfizer)

Will be combined with other antibiotics ad **nauseum**.

Sigmamycin is a mixture of Tetracycline and Oleandomycin. Supposedly effective against resistant *Staphylococci*.

Proved to be a dud against acute leukemia. Only one report published so far.

A new sleeper: An Oleandomycin salt of Penicillin G. The M stands for Matromycine, Pfizer's Oleandomycin.

Especially effective in *Aerobacter aerogenes* bacteremia.

May prove to be the compound with the broadest spectrum.

CLINICAL OBSERVATIONS ON THE PHYSIOLOGY OF BONE

By Dr. Wallace H. Cole St. Paul, Minn.

THE PHYSIOLOGY of bone, its development, growth and repair is so taken for granted by most of us that we seldom stop to think of the intricate and complex tissue with which we have to deal when treating diseases and injuries of the skeleton. Although a vast array of facts and theories has entered the medical literature there are still many factors relating to the bones as organs of the body which are completely unknown or as yet very controversial. The nature of ossification, the minute processes involved in bone formation, the character of the various bone cells, the importance of hydrogen ion concentration and of the many other chemical reactions necessary for bone to remain alive and to be an active tissue, as well as other allied conditions too many even to list would have to be evaluated before a true scientific background for a knowledge of bone physiology could be obtained. To attempt a detailed physiological discussion is, of course, impossible and, therefore, only a bare outline of the problems involved will be indicated but enough, it is hoped, to remind you that bone has a very dynamic nature and that the calcium, phosphorous and organic content change constantly during life with alterations in the normal resulting from changes in general physiology, as in starvation, immobilization and certain generalized diseases, and also following shifting of the strains and stresses acting on the bones.

The size and weight of a bone depends to a certain extent on the use to which it has been put and the bones of a man who has done heavy physical work all his life are heavier, more dense, and rougher than in one who has always had a sedentary occupation. This difference must depend upon activity and function as applied to living and plastic tissue. Without this stimulating activity the bones are smoother and less radiopaque and as more extreme examples we see the bone atrophy which accompanies long fixation in plaster of Paris during fracture treatment and the marked disuse atrophy frequently present in a limb weakened by poliomyelitis. External forces applied by means of splints, bandages and other types of apparatus have long been used therapeutically to change the shape of bones. Practical experience has shown

this to be possible although what occurs intrinsically cannot be fully explained other than that bone is biologically plastic and will react to the forces placed upon it. Club feet, bowed legs, curvature of the spine and many other common conditions are treated with this in mind and with the realization that the deformities were in themselves based in general on the same factors. The deformities of the lower jaw and teeth resulting from scoliosis plasters has necessitated a change in the method of application due to the rather quick reaction of the mandible and the teeth to the abnormal forces placed upon them. The science of Orthodontia is founded on this knowledge.

It is well to remember that there are definite inherited traits which must be recognized as important basic reasons for bone growth and architecture as, of course, is also true with the other organs of the body. The inherent growth tendencies in bone have been beautifully shown in studies of the growth of the limb-bud of a chick in tissue culture after removal from the embryo. The femur was reproduced from the apparently undifferentiated mesenchyme and bore a marked resemblance to the normal in configuration and cellular structure in spite of the absence of all soft parts and the forces which they would ordinarily exert on the growing bone. The form of the femur and, therefore presumably of other parts of the skeleton, is not dependent upon intact surrounding structures for its definite basic pattern although many modifications normally must occur due to functional, that is mechanical, nutritional and other factors, subject to the action of the surrounding tissues. This marked capacity for growth and differentiation as shown in the laboratory bears out what John Hunter expressed over one hundred and fifty years ago when he reasoned that there is a form of "consciousness" to living bone. More recently Janson has discussed this activity of hereditary forces and speaks of a kind of "intellectual judgment" in bone cells. As Murray says, "the cells of the axial condensation in such a structure as a limb-bud are already determined or at least biased toward the formation of cartilage and bone," and "there already exists in the skeletogenous mesenchyme, before the lumb-buds appear, some kind of plan or growth

pattern."

The long bones of the body are pre-formed in cartilage and grow in length through enchondral ossification and the activity of the epiphyseal disks, the mechanism of which growth and the intimate nature of the process at work being still obscure but clinically, outside the laboratory, we all know that the epiphyseal cartilage is the exclusive agent which is responsible for diaphyseal elongation. Any interference with an epiphyseal disk will tend to distort its function and if complete destruction occurs longitudinal growth is irreversibly stopped at that point. The operations which are directed at the epiphyseal line in cases of unequal leg length are based on the practical knowledge of the function of the line although probably there is no surgeon who understands the basic biological or chemical reasons back of this knowledge. The power of growth is demonstrated when an arrest of growth is attempted by placing staples across the epiphyseal line, for we know from sad experience that at least three staples are usually necessary on either side to restrain the tremendous growth pressure of the line and prevent spreading of the staples. This pressure will break wires which are used for the same purpose. If a portion of the epiphyseal disk has been destroyed or damaged by injury, tumor, infection, x-ray or other agent, the remaining part will continue to grow and deformity of the extremity will result. This probability must be recognized even before it is grossly evident so that parents can be told what to expect and so that preventive measures, if reasonable, can be started early. Every epiphyseal separation or fracture involving the epiphyseal line is potentially a cause for later deformity and such cases must be watched long after healing has taken place for obvious reasons.

The function and properties of the periosteum have been the basis of many controversies and discussion both in the past as well as more recently and a review of the literature on the subject tends to make a surgeon fall back on his practical observations without attempting to explain or worry about fundamental reasons for these functions. From a surgical point of view the osteogenic power of the deeper layer of the periosteum in active or growing bone cannot be denied and although bone growth and repair will proceed without periosteum, or the bone forming cells in its deepest stratum, the

circulation which it gives to the underlying cortical bone and possibly its action as a limiting membrane makes its presence essential for normal bone development. Clinical observation shows constantly that the less the periosteum is disturbed the more quickly and surely a fracture heals, other things being equal.

Bones, having pre-eminently a mechanical function, illustrate well the interdependence of function and structure in the body as already suggested and Wolff's law and its modifications is based on this premise. It is only by the influence of forces applied through normal function that normal contours and structures as we know them can be elaborated and maintained. The self differentiating skeleton of the early embryo, mentioned earlier, soon reacts to the effect of these mechanical elements of growth and the final form of any bone is not normal unless that bone has had normal function throughout its development. The coxa valgum and atrophy appearing in paralytic hips and the changes seen in untreated congenital dislocation of the hips are examples of this which we have all seen. The mechanical forces probably act as an excitant of the various biological and chemical factors which are more directly and intimately associated with bone growth. We do not have to be exact followers of any of the outstanding students of bone physiology to be clinically sure that there are laws of "functional adaptation" of bone which are based on the structural changes which occur following alteration in the forces of pressure and tension acting on that bone.

It has been said that a keen observer could tell in many cases what the occupation of an individual had been by examining his skeleton and there is no doubt but that certain types of heavy work carried out through many years will cause skeletal changes as a response to the specific forces acting on the bones. Wright has shown in this connection how in a sloth, an animal who does not walk but hangs from the limbs of trees with all four extremities, the architecture of the upper end of the femur is entirely different from that in related animals who use their legs for weight bearing.

The growth of bone and enlargement of the various parts of the skeleton up to adult life shows definitely how continuously the process of laying down new bone and the resorption of the older bone is going on during life although

few of us ever stop to analyze what this remodeling means. Just try to visualize the shape of an adult femur if growth in length was not accompanied by resorption of the excess bone at the same time. Compare the size of the obturator foramen in an infant and an adult and it is at once evident that resorption of bone is as active and necessary as the depositing of new bone during growth. In early life the active formation of new bone must proceed faster than resorption or else growth would not occur and it is only when adult life is reached that the two processes tend to balance each other. Late in life the reverse may happen to a certain extent.

A discussion of a few clinical cases may bring out more clearly some of the points that have been touched upon. Epiphyseal separation will occur instead of fracture following certain injuries in children because the epiphyseal line is weaker than the bone itself and consequently will give or disrupt before the adjacent bone breaks. Likewise we sometimes find deformity developing through an epiphyseal line when the contiguous joint is ankylosed as the cartilaginous disc responds quicker to deforming forces than the bone. It has not uncommonly been observed that an apparently ankylosed hip in a growing individual has gradually assumed a deformed position, examination revealing that the head of the femur, or what remained of it, had not changed its relationship to the acetabulum but that the change in position had taken place through the proximal femoral epiphyseal line. Children with ankylosed knees return sometimes with marked flexion deformity due to changes at the distal femoral epiphyseal disk probably the result in part, at least, to the pull of the hamstring muscles. Certainly this happens often enough to insist that the hamstrings be completely severed whenever a knee joint fusion is undertaken before growth has been completed.

Bone grafts are still the subject of a vast literature of a very controversial nature which cannot be discussed here, but there is one practical clinical observation which might be mentioned; a graft which is made to function will usually grow and develop but without this stimulus it will tend to atrophy and eventually disappear. Many surgeons have remarked on the disappearance of the shelves or roofs which they have placed over the heads of femora for

stabilizing congenital luxations of the hip but experience seems to show that any shelf which is properly placed so that it functions as a buffer to the thrust of the femora will hypertrophy and not melt away.

When a bone block is built up to prevent foot drop in a paralytic foot the same factors are at work and a functioning block will hypertrophy to its necessary strength and develop an internal architecture commensurate with its function.

Fracture through functioning bone grafts is not an unusual occurrence and union progresses in most cases without further operative interference, the grafts being live bone and, therefore, reacting as normal bone would in forming callus.

When the shaft of a bone is partially destroyed so that there is a gap in the continuity of the bone and, therefore, loss of function of that bone the ends of the fragments remaining tend to atrophy and become conical and shorter.

It has been suggested that alternate relative hyperaemia and ischemia as a result of muscle relaxation and contraction is largely responsible for maintaining the normal calcification of bone and that this assists in the healing of fractures and other bone defects. We know that bones in a paralyzed person tend to atrophy but certainly fractures in such bones heal promptly in the absence of all the muscles.

One could continue indefinitely with comments of the various clinical phases of bone physiology, which has been discussed here strictly from the Orthopaedic point of view, and no attempt has been made to digress into the more strictly medical aspects of bone physiology as seen clinically although much might be given based on blood changes after such a procedure as intramedullary nailing in children, on calcium metabolism in the body, 99% of the body calcium being in the bones, on hormonal aspects of the subject, and on what was suggested earlier, the atrophic changes occurring in the skeleton in later life. It is hoped that the points covered will refresh your memory on some phases of bone physiology and to make it very apparent that, although the underlying biological and chemical factors may not be well understood, we are dealing daily with a markedly complex and active tissue the nature of which is mechanically suitable for the work it has to perform.

THE *President's* PAGE

DISRAELI wrote, "Propriety of manners and consideration for others are the two main characteristics of a gentleman."

These are but two of the noble attributes of your friend and mine, Jesse D. Hamer.

It is with great pride that I announce the recent action of the Council of the Arizona Medical Association, and the resolution of the Maricopa County Medical Society in commending Jesse Hamer to the House of Delegates of the American Medical Association for election to the office of vice president of the AMA.

That we should seek to honor Dr. Hamer in this manner is only proper, as an expression of our sincere respect for a man who has served his county society since 1928, his state association since 1934, and the AMA as a delegate for the past twenty-two years. It is beyond the scope of your President, within this short space, to recite the numerous accomplishments of this man. We all know of his service on the AMA Council on Medical Service and on the Advisory Committee to the Board of Trustees of the American Medical Education Foundation.

He has given unstintingly of his time, labor and wisdom in service on many of our important committees, and he guided the destinies of the Arizona Medical Association in 1936, when he served as our president. He is a veteran of World War One, and has been a Commissioned Commander in the Medical Corps Reserve of the U. S. Public Health Service since World War Two. He is a member of many national and regional scientific organizations.

Yet, this remarkable Jesse can find some time to devote to services to his community, especially to such youth projects as the Boy Scouts.

Truly, Dr. Hamer's life-time has been crowded with diligent service and fine accomplishments for others. He has performed all of these services without thought of asking for reward or praise.

Please join me in the hope that the glowing warmth of our pride and respect for Jesse Hamer will pervade the convention hall of the AMA in New York City in June, 1957, and that the House of Delegates of the AMA will take cognizance of our prayer for his election to the high office of vice president of our national organization.

A. I. Podolsky, M.D.

President

THE ARIZONA MEDICAL ASSOCIATION, INC.

Editorial

ARIZONA MEDICINE

Journal of

ARIZONA MEDICAL ASSOCIATION, INC.

VOL. 14

FEBRUARY, 1957

NO. 2

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

8. Illustrations — Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.

9. Reprints — Reprints must be paid for by the author at established standard rates.

The Editor is always ready, willing, and happy to help in any way possible.

(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

THE CASE OF THE YELLOW

JOURNALIST

(Reproduced by permission of the American Academy of General Practice).

THE JULY issue Woman's Home Companion article, entitled "Why You Can't Afford to be Sick" will earn authors Sidney Shalett and J. Robert Moskin the 1956 award for cheap distorted journalism. Never, between the covers of a single magazine have we found a more complete collection of malodorous, journalistic bedevilment. It is an old melody and the lyrics have not changed. The struggling free-lance writer knows that many editors like an ounce of truth and a ton of seething sensationalism. Witness the success of the inside-story magazines.

Shalett and Moskin found the bottom of the barrel. Every junior journalist knows a dozen ways to twist the truth and sell the story. The authors learned their lessons well — then pulled out all the stops.

The Shalett-Moskin story is little more than a grimy, abasing anthology. In a single, scathing polemic, the authors discuss gouging, unnecessary surgery, ghost surgery, fee splitting and malpractice. The informed readers, having been previously exposed to other inept contributions, have the impression that authors Shalett and Moskin have produced little more than a single, trashy conglomerate.

Exhibiting an unenviable lack of originality, the authors resort to such tired tricks as the isolated case and the glittering generality. The article cites four cases involving financial panic as the result of prolonged illness. This is as enlightening as a clinical study of the first four children who received Salk polio vaccine.

The article asks and answers questions. One answer is amusing — in an absurdly grim and tragic way. Why are some physicians opposed to group practice? Because, the authors point out, group practice takes the patient out of circulation. When the illogical is found wanting, try the ridiculous.

This is no rebuttal. Certainly the more than 24,000 who read GP won't waste their time on ill-considered drivel. But the magazine (thanks in part to other morsels of sensational journalism) will reach hundreds of thousands of people who will promptly decide that their family doctor is an evil, gouging, fee-splitting, ghost surgeon. It is certainly not appropriate for the doctor's waiting room.

Approximately a year ago, Sidney Shalett visited the headquarters office. He was assured and reassured that the Academy's press and public relations staff was at his disposal. We feel sure that the American Medical Association and others have extended the same invitation. Only by rigidly following a policy of full cooperation, can we contribute to accurate, unbiased articles.

Small wonder then that we are distressed by the Woman's Home Companion article. We appreciate the might of the pen and the power of the press. We also place a premium on truth, accuracy and the ethics of good journalism.

* * *

The above scathing editorial is reproduced to give you an opinion of the article mentioned. The article, "Why You Can't Afford to Be Sick" although being yellow journalism is more likely prompted by more sinister motives of the authors and is an exemplification of venomous propaganda, indulged in by many others besides Shalett and Moskin. These articles are truly Hitler-type propaganda. This propaganda, by repetition, is to prepare the public for the socialization of medicine, which would be the great step necessary for over-all socialization (call it Federalization, or any other modern term if you wish).

We can not feel too smug in our knowledge that the "Woman's Home Companion" closed its doors in December 1956 along with Colliers, which published "Why Some Doctors Should be in Jail".

It is hoped that if you have not read the July and August issues of the Woman's Home Companion 1956, that you have your wife dig them out for you. Next month we will, for your information, refute the authors of this malicious perversion of the truth.

Congress is in session. It is time for us with renewed vigor to protect our government so

that it may continue to be successful for all people.

LBS

UNQUALIFIED M.D.

IT WOULD seem clear that the statements made by Dr. Willard C. Rappleye, dean of the Faculty of Medicine at Columbia University in his annual report to the president of the university and widely publicized by Scope Weekly under the headlines, "Columbia Dean Asserts U. S. Admits Large Numbers of Unqualified MDs" need some careful "spelling out".

In the first place it is important to remember that the business of granting citizenship is Federal Government business; the business of granting license to practice medicine is entirely the business of the government of each individual State. If the Empire State is flooded with unqualified MDs from foreign medical schools then the New York State Examining Boards are solely responsible.

In the second place; a clear distinction should be made between foreign schooled doctors admitted on student exchange visas and those admitted on immigrant visas. Under existing laws the former cannot possibly be licensed to practice medicine anywhere in the United States. Citizenship, or at least first papers, is a prerequisite to medical licensure and the holder of the primary or exchange visitor visa cannot under any circumstances change his status. He may apply for renewal of his primary visa annually but no matter how many years this may be granted he is no nearer citizenship or medical licensure. If he wishes to become a citizen of the United States he must first return to his native country, wait two full years and then he may apply for a permanent or immigrant visa which of course is subject to quota regulations.

The foreign schooled doctor who arrives in the United States with an immigrant visa can file his first papers and thereafter, in some States, can apply for medical licensure. Whether or not he gets his license depends entirely on the standards and requirements of the State Medical Examining Board. In Arizona the standards are high and the requirements are rigorous. A foreign doctor graduated from an unapproved

medical school has just as much chance of getting a license to practice medicine as a poorly trained American doctor; practically none!

The reader of the Scope Weekly digest of Dr. Rappeleye's report is likely to be confused when he encounters the statement that over 25% of the house staffs in the hospitals of the United States are aliens and in some states the percentage is over 50%. These men and women are still students under the direct and immediate supervision of licensed and presumably responsible physicians. If there is second class care in some sections of the country it is the fault of the attending physicians, not of the alien students on the house staffs. Thank God for the good men and women who have come to us here in Arizona for more medical training. What if we had to depend on the A.M.A. matching plan to staff our hospitals? C.L.R.

Book REVIEWS

MASKED EPILEPSY by Hugh R. E. Wallis, M.D. 51 pages. (1956) Williams & Wilkins, \$2.50.

Since 1907, when Gowers wrote on Borderland of Epilepsy, no summary on masked epilepsy has appeared in book form. The subject fascinating in itself, has great diagnostic and differential diagnostic importance, both medically and legally. Cyclical vomiting, abdominal pain, pyrexia, nightmares and other symptoms as manifestations of epilepsy are discussed.

Stacey's Medical Books, San Francisco

CLUES IN THE DIAGNOSIS AND TREATMENT OF HEART DISEASE by Paul D. White, M.D. 2nd ed. 190 pages. (1956) Thomas, \$5.50.

This edition presents additional important diagnostic and therapeutic clues in cardio-vascular diseases. The data has chiefly been assembled from the author's lectures in post-graduate courses. It should continue to be popular with the general practitioner for use as a quick reference.

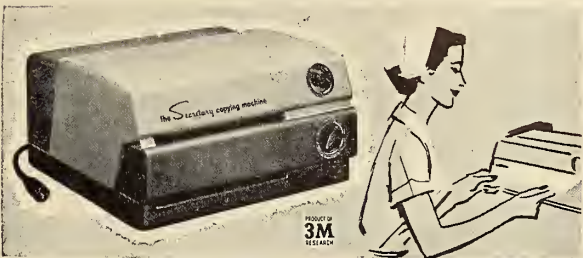
Stacey's Medical Books, San Francisco

CIBA FOUNDATION SYMPOSIUM ON EXTRASENSORY PERCEPTION edited by G. E. W. Wolstenholme and Elaine C. P. Millar. 240 pages. (1956) Little, Brown, \$6.

That an international symposium should dare to examine experimental and interpretive work in this field took "incredible courage," according to participating experts. Their observations and discussions present the best available, current appraisal of this novel, sometimes disturbing, yet fascinating frontier.

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The History of Medicine in Arizona

By Nelson Bledsoe, M.D.

GOVERNOR BENJAMIN BAKER MOEUR, M.D.

(First Installment)

THE IMPACT the activities of fellow physicians in and out of the professional practice of medicine is of importance to medical men of any time and age. One whose influence was considerable was Governor B. B. Moeur, M.D. His story carries with it much of interest not only from the highly colorful character of the doctor, but because of the effect upon life in the state since his passing this way. Quite suddenly, at nearly the end of a useful, steady life of service in medicine in his small community, he rocketed into state and even national fame. Dr. Moeur was twice governor of Arizona and died seventy-one days after relinquishing the governor's chair in 1937, at the age of 67.

He was son and grandson of doctors in San Antonio and spent much of his early days, until the age of 20, in the saddle on the range punching cows near the city of San Antonio. It was, no doubt, the experience of working with tough ranch hands and driving dumb critters that gave him the command of the vocabulary for which he was noted and his expressive language was the source of much humor. He always considered himself a Texan at heart and is said to have once engaged in a fist fight over some slight to his native Texas.

He came to Tempe in 1896 where he and his young wife settled in a two room shack in this tiny village which seems to spawn politicians, such as Hayden, Murdock and Pyle. During the years to follow, the shack was remodeled and added to many, many times until finally it became the spacious brick residence, with ample room for all four children and the grandchildren, standing in the original location with his office attached. During those first years, many of his calls were made on horseback or by buggy over the winding dusty desert trails. The sparsely settled countryside was only a short span away from the Indian Wars, the time of Geronimo and Cochise, but the population rapidly grew in the valley and the territory of Arizona, and Dr. Moeur's practice and responsibility with it. Dr. Moeur served for years as college physician of the Tempe College,



Benjamin B. Moeur, M.D.

serving largely without pay and it was his policy never to send a bill to a widow or a preacher.

His territory covered all of central Arizona and many times hurry-up trips were made with relays of horses. He was responsible for patients at Buckeye and as far up in the mountains as Roosevelt Dam. He made trips up to the dam when it was being built to look after the workmen. He didn't care for surgery and did the least possible, but he did do a great deal of obstetrics, delivering several thousand babies during his practice.

The story of an experience as told by Dr. Joseph Greer, who at that time was practicing at Mesa, is that Dr. Moeur called him out to see a woman with an acute abdomen and the arrangement was that Dr. Moeur was to give the anesthetic and the operation was to be performed immediately on the kitchen table. The fearful, timorous little lady looked up into Dr. Moeur's eyes and said, "Oh, Dr. Moeur, how long will I sleep after the operation?" He said, "Mmpff! B'God, some of mine are sleeping yet."

Dr. Moeur's daughter-in-law, Mary Moeur, who lives in Tempe, told a story about some time in the twenties during his busy practice, patients would come to the house at all times of the day and night. The phone was constantly ringing, and people were banging at the back door and the front door; one night Dr. Moeur had just returned about 1 o'clock after a hard day, the house finally became quiet when the phone rang. Mary said this was not at all unusual, but they heard a terrific string of oaths from the bedroom and, in fact, he was cussing so hard and the oaths a little worse than ordinary that they all went in to find out what was wrong with Dad. She entered the door just in time to hear him say, "Take him to hell for all I care," followed with a lot of other advice along the same line and banging up the receiver. Mary said, "Grandpa, what in the world is wrong?" He said, "This --- --- --- woman phoned to see if it would be all right to take little Johnnie to Buckeye."

Another interesting story Mary recalled was the time the front door bell rang and a bus driver was ushered into the living room. It was Thanksgiving day and the whole family, children and all were just sitting down to their Thanksgiving dinner. After visiting socially with the man for awhile, Dr. Moeur asked, "Well, Charlie, what do you have in mind?" The visitor answered, "Doc, I think I've got the smallpox." He had, so, as a result, Dr. Moeur had the whole family vaccinated on that Thanksgiving Day.

Dr. Moeur was an angry man at times, and at other times most kindly; in fact, with all his colorful language, the kindness seemed to over-ride the other. There seldom has been a more profane character in public life, even in the roughest pioneer days, yet so often his use of profanity sounded just right, the expressions he used.

After the crash in 1929, taxes began to loom heavily on the property owners of Arizona. Dr. Moeur had worked for statehood and had been a member of the territorial legislature that established the Constitution in 1912. It had taken many years to bring about statehood, partly because the powers in the saddle in Washington were afraid to upset the balance of party politics in Congress by introducing another "Southern" state. After the 1929 crash, credit retracted and unemployment increased, cash capital went into hiding and farm properties

were unable to carry their mortgages, to say nothing of taxes. Dr. Moeur repeatedly told his friends "somebody has got to do something about property taxes". In 1932, he finally decided to enter the race for governor against Attorney K. Berry Peterson and former seven times governor, George W. P. Hunt. Most of his close friends were skeptical and his nephew told him he "didn't have a Chinaman's chance of being elected". With no experience in politics and with no ability in public speaking, he would get up before an audience and tell them that he couldn't make a speech, but that he would make a "much better governor than a campaigner".

But let us hear what his nephew, Hub Moeur, has to say about him.

H.R. I'd like to ask you two or three questions; in the first place about Dr. Moeur's particular beliefs and platform — he was the first governor to promote a sales tax for Arizona?

H.J. Yes.

H.R. That really was the basis of his campaign, perhaps?

H.M. There is no question about that — he came into my office and told me about everything he had acquired over a period of years was in property, he was hollering about taxes. He said he was going to have to get a sales tax, that he was going to run for governor and I told him he was foolish.

H.R. In the process of the campaign, when he first ran, who was he running against?

H.M. He ran in the primary against K. Berry Peterson and old man Hunt.

H.R. What did the dopesters say?

H.M. Oh, well, they didn't give Dr. Moeur an outside chance even, but Hunt had run a good many times and people were disgruntled.

H.R. Wasn't it thought to be more or less a joke at first?

H.M. Well, they didn't think it was a joke, but they just didn't think he had an outside chance. I talked to Berry Peterson and I tried to get him to stay out. I told him that Doc singlehanded could take old man Hunt.

H.R. Well, can you tell me how close the vote was?

H.M. Not a majority, but a comfortable plurality over either one of the others. I don't think he got more than both of them put to-



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gether by any manner of means; it was a fairly close race, in a three point race like that.

H.D. The other two split the vote more or less, did they?

H.M. Well, old man Hunt had his block pretty solid, the trouble is anybody running against any two or three fellows, well, they split the vote.

H.R. Was it Peterson and Moeur that split the vote between themselves?

H.M. Yes, I imagine most of the people that voted for Barry Peterson later voted for Doc.

H.R. Well, now do you recall what Dr. Moeur was most proud of after he had been in office for a couple of years besides, of course, getting the sales tax passed?

H.M. He just knew he was cleaning things out.

H.R. Who beat him when he was beaten?

H.M. I think four years later Stanford beat him in the primary. By that time we were into the depression pretty deep and all that kind of business. He was elected in 1932 and it was in 1936 when he was beaten.

See next issue for final installment
on Dr. Moeur.

"The Case of the Doubting Doctor"

THE A.M.A. has just completed a thirty minute, color and sound movie entitled "The Case of the Doubting Doctor". The objective of this movie is said to be "to stimulate greater member participation in the activities of organized medicine; to create a better informed membership, and to enhance individual members' appreciation of the benefits of participation in medical organizations". It tells therefore the story of what organized medicine means to the 160,000 members of the A.M.A., but deals not only with the A.M.A. but in great measure with the work of the state and county medical societies. This movie is available on loan from the A.M.A. for showing before medical societies as well as before civic organizations such as Rotary Clubs, Kiwanis Clubs, etc. Those interested in obtaining this should address the A.M.A. with their request and plan a date far enough ahead so that the film will be certain to be available.

R. Lee Foster, M.D.

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Illustration by Hans Elias

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G. D. Searle & Co., Chicago 80, Illinois.
Research in the Service of Medicine.

1. Asher, G.: Personal communication, June 23, 1956.
2. Settel, E.: A Clinical Evaluation of a New Oral Diuretic, Rolicton, Postgrad. Med., Feb. 1957, in press.
3. Goldner, M. G.: Personal communication, June 29, 1956.

SEARLE

TOPICS OF *Current Medical* INTEREST

FREEDOM IN MEDICAL PRACTICE

By Dwight H. Murray, M.D., President
American Medical Association

ALMOST six months have elapsed since we last met to deliberate and act on medical affairs. The time has passed quickly, but not quietly.

The rumble of war and revolution has resounded in our ears. The din from political battles has been deafening.

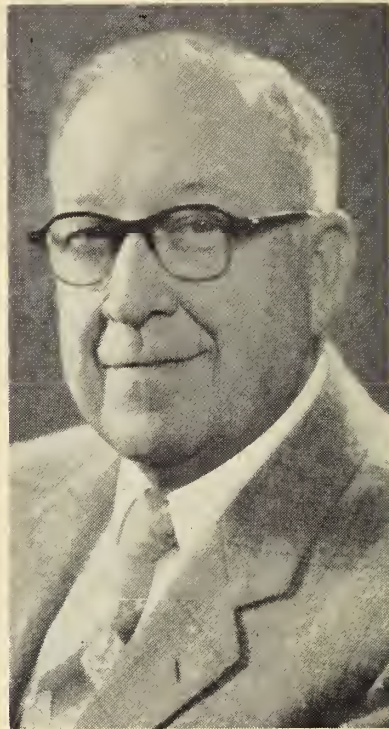
All of us . . . sooner or later . . . learn that today's events do not just swirl around us, but involve each of us. As doctors we cannot get away from them by claiming that our only interest is in the sick, and that we cannot be bothered by political, social and economic problems. These matters demand attention from the doctor as well as the lawyer, the businessman, the newspaper editor, the labor leader and the worker.

If we are concerned about what happens on the international, national and local fronts — and we should be — then certainly we cannot afford to be disinterested in what happens in our own area of health and medical affairs. Yet there is apathy in our ranks.

Today there is a greater need for a united, forceful and informed profession than ever before. We have been caught in the throes of a social revolution which demanded something for nothing. Changes have been taking place all around us, and medicine has not escaped unscathed.

For example, in a few days Public Law 569, the bill providing medical care for military dependents, becomes effective throughout the land. Contracts already have been signed with the government by the majority of our state societies. No longer can any doctor claim that this law does not affect him. No longer can he say that government laws really are not changing the practice of medicine.

Public law 880, better known to all of us as H.R. 7225, is another case in point. Medicine now is facing the problem of protecting the taxpaying public from abuses and of cooperating with the government to carry out the pro-



Dwight H. Murray, M.D.

visions of the law. The law is now on the books, and we must provide the leadership necessary to make it work as well as possible.

It was encouraging to hear Ezra Taft Benson, secretary of agriculture, say last week before the American Association of Land Grant Colleges and Universities:

"Sooner or later, the accumulation of power in a central government leads to a loss of freedom. . . . Raids on the federal treasury can be all too readily accomplished by an organized few over the feeble protests of an apathetic majority. With more and more activity centered in the federal government, the relationship between the cost and the benefits of government programs becomes obscure. What follows is the voting of public money without having to accept direct local responsibility for higher taxes. . . .

"If the present shift of power from state to federal authority which started 25 years ago is allowed to continue, the states may be left hollow shells."

It was encouraging to hear such comments from a member of the President's Cabinet. I

(Delivered at the opening session of the House of Delegates at the Clinical meeting of the American Medical Association in Seattle, Washington, November 27, 1956.)

only wish that all members of the official family, and more important, every member of the United States Congress, felt the same way.

The expression of this philosophy, with which medicine so heartily agrees, sounds good, but putting it into practice is the thing we are really interested in.

Today the medical profession along with business and industry is caught between those who desire to promote sound government and those who desire even more intensely to perpetuate party power. Unfortunately, in recent years a benevolent federal government appears more attractive to the voting public than the preservation of individual freedom. Medicine must do its utmost to reverse this trend.

MEDICAL FREEDOM ESSENTIAL

In my travels around the country as your representative the last 18 months, I have seen little dissension or rancor within our ranks. However, I must report that I have seen too much complacency over governmental encroachment into medical affairs. And I am deadly serious when I say to you that apathy by the few, or by the many, can be detrimental to all.

No nation can merely reap the benefits of freedom; it also must sow seeds of freedom.

In medicine the situation is the same. If an apathetic medical profession takes its freedom for granted, it will be the beginning of the end. A strong, free profession must work for freedom so that it may live in freedom. And history tells us that once medicine loses its freedom, other fields of private endeavor are immediately in danger.

I do not wish to paint a dark or distorted picture of medicine's free status and its stature in America today. But I do believe words of caution and an appeal for vigilance are in order.

The road of apathy and disunity can only lead to disorder and perhaps disintegration, and we must sound a warning to all our colleagues who don't care, or who are pulling in the opposite direction. The road of alertness, action and unity is the proper road for all of us to be traveling together.

If I had just one wish for the coming year, it would be to command the time and talents of the 160,000 physicians in the American Medical Association. I would set us all to the task of emphasizing and re-emphasizing the absolute necessity of patient and professional freedom.

PATIENT'S RIGHT TO CHOOSE HIS DOCTOR

I believe it is one of our prime responsibilities to prove to our patients that their right to choose their doctor is a most important one.

Free choice brings a bond of confidence between doctor and patient which no compulsory medical system can create. It means that the patient knows the physician will be interested in him as a person, not as just a serial number of the 2:45 appendicitis case.

For the doctor, free choice means that the patient has selected him for his abilities, training, sincerity and personality. When a patient comes into my office, I know he has made a choice. And from that moment there begins a physician-patient relationship of the highest order. To me the patient is someone special, and I in turn hope I am someone special to him.

Once the patient has made his choice, the physician automatically assumes an unqualified responsibility to the patient. No system of medical care that uses a third party to bring doctor and patient together can match our kind of cooperative performance for the treatment of illness, the cure of disease and the betterment of the patient's health.

Freedom to select a doctor is part of everyone's great freedom to choose — to choose what he wears and eats; where he works and worships, and how he votes. Take away any part of this freedom and great damage is done to our democratic system.

FREE CONDUCT IN MEDICAL TREATMENT

Another freedom closely tied to freedom of choice is freedom in the conduct of medical treatment.

At the recent meeting of the World Medical Association in Havana, Cuba, Dr. Rolf Schloegell of Germany made a stirring defense of free conduct of medical treatment. He told us that the medical profession believes the attending physician alone is competent to decide what measures he deems necessary and will apply in order to bring about the desired improvement. He warned too of the danger of excessive restriction on the freedom of the patient and the attending doctor.

Yet the trend toward extending social security in the medical care field has been steady and

has accelerated since the end of World War II.

The dangers of shifting responsibilities for medical care from the patient and doctor to the doctor to the government are obvious. The caliber of medical care cannot be as high when both patient and doctor are dependent upon government. Initiative succumbs to dictation, and self-reliance is replaced by the crutch of government.

We do not deny that there is an area of legitimate concern by the government for the health and welfare of the people. But each year government seems to extend that area. We get some idea of this expansion from the new federal medical budget.

This year, according to our Washington Office, the average family will be paying \$54.61 for the U. S. Government's health and medical activities. And the total expenditures this year amount to 2½ billion dollars — 290 millions more than last year. Even in an over-all federal budget of 61 billion dollars, the total health cost of 2½ billions is not insignificant. It is a billion dollars more than the cost of running the Commerce Department, half a billion more than the Agriculture Department's and six times more than the Interior Department's budget.

Many expenditures obviously are necessary to keep up our unsurpassed public health standards, and research may pay rich dividends in scientific discoveries. But there is no doubt that much money is being spent on medical activities that should not involve government participation.

The trend is to spend more and more government money on health and medical matters because it is good politics. Apparently many Americans still want to see government in the role of a big brother, dishing out so-called gifts and bargains under the guise of benevolent economic planning.

I believe it is our duty, as it is everyone else's, to combat the attitude of "what's in it for me?" and to promote the long-honored creed of "what's best for all Americans and our free society?" I think that a nation can draft into state medicine inch by inch just as surely as if the scheme were foisted upon a people overnight. The "drift" method may take longer but the result will be the same.

So it is time all of us sounded the alarm against soft and superficial security and against the invasion of personal responsibility. It is

time we stood up together for militant freedom and for full rights and responsibilities of the individual.

BELGIAN DOCTORS TURN BACK GOVERNMENT

There is no better example of what a unified medical profession can do than in the story of the recent fight of the Belgian doctors against the government's proposals for a state service of medicine.

Without consulting the medical profession the Belgian government proceeded to draft rules and regulations of health to be incorporated in the nation's social security legislation. Under the proposals doctors were to sign an agreement to abide by the present rules and any later regulations. For the patient there would be the usual red tape in getting medical care.

When the Belgian doctors learned of the scheme, they met in conference with the government. They told the government what they wanted and what they would not accept. The government agreed.

For several months everything was quiet. Then the Belgian doctors suddenly read about the new health bill that the government was sending to Parliament. It was quite contrary to the earlier agreement worked out by the profession and the government. But the bill was passed quickly.

The Belgian medical profession protested and said it would not be placed under the Ministry of Labor. Instead the doctors proposed to set up their own plan of medical assistance.

Before long, the government saw that the medical profession meant business and that the doctor's plan was an attractive one. So it declared that its own bill was not in force and could not be in force without the consent of the medical profession.

To me this fight against legislative intervention in medical care is excellent evidence that the profession can defend itself if it unites to defend the basic principles of freedom and if it offers constructive proposals. By using the Belgian national motto, "In union there is strength," the medical profession showed doctors everywhere that dangerous government plans can be turned aside by the strong.

I also read recently in the Journal of the World Medical Association of the fight of the medical profession of Malta against a British

government scheme to introduce a full-time salaried medical service, without the right of private practice, on an island dependency of Malta. Here again the doctors reacted with unity and strength, and successfully thwarted the government's plan.

There is a lesson in these stories from Belgium and Malta. They prove that a unified profession has a great political power for good — the good of the patient, the doctors and the nation.

CONFIDENCE AND UNDERSTANDING NEEDED

While we are developing unity within our own ranks, I believe it is equally important to continue to build up the confidence and respect of our patients and to make our legislators aware of the necessity for freedom in medical practice.

Let us never reduce the quality of service we render to our patients, and never lose the personal touch in medicine. Where there is any opportunity to improve upon our medical care, let us seize it and show our abilities to do an outstanding job. Satisfied patient-customers will give us deserving support when we need it.

We also should realize that the destiny of medicine can be determined to a large degree in the halls of Congress. If this be true, then it is even more important that we take an even greater interest in those who elect the Congressmen. Sympathetic understanding of our position by federal legislators through the voting public will be an insurmountable deterrent to the forces supporting state medicine.

The day has come, gentlemen, when we can no longer look upon medical economics and social changes merely as issues to be considered during our limited leisure hours. Our interest in them cannot be superficial or intermittent.

We now must pay daily attention to these matters. Medical socio-economic affairs can no longer be just incidental with us. They must be a vital part of our life and of our profession.

Each of us, I believe, should dedicate himself to the words included in the oath of office taken by Presidents of the A.M.A.

"I shall champion the cause of freedom in medical practice and freedom for all my fellow Americans."

As doctors, representatives to the A.M.A. and as spokesmen for the A.M.A., let's remember these words and live by them. And to alter a phrase of President Lincoln's only slightly: Let's make common cause to keep the good ship of medical freedom on this voyage, or nobody will have a chance to pilot her on another voyage.

STUDY OF MEDICAL SERVICE IN U. S.*

SOME 7,000 hospitals across the nation now have received questionnaires that may influence the course of medicine in the United States. Hospital construction, medical education, health insurance rates, public regard for doctors and health — all these are subject to beneficial revision when this massive five-year study is completed. The study is now at midpoint. It began late in 1953 when the A.M.A. undertook the gigantic task of measuring the total of medical service rendered to the American people by their physicians. This had never been done before. For once, there would emerge a national picture of what the patient gets for what he spends — and not the cold, misleading stroke of a statistician's pen sketching only a dollar sign.

*This is Bureau of Medical Economic Research Publication M-107.

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By GUILLERMO OSLER, M.D.

A PRELIMINARY (newspaper) story says that the New York State Journal of Medicine carries a report by Drs. Max Jacobson and Charles Ressler of a successful therapy for HEPATITIS. . . . They used a combination of cortisone and antibiotic treatment which cleared the disease in 12 patients within a week or two. The usual therapy requires weeks to months. . . . We insert our two cents worth and urge two considerations, — the series is a small one; the patients should have a chest x-ray to rule out TB if intensive steroid therapy is to be used.

If we had 240 hours in each day, and only 8 hours of work to do, we'd be able to read such books as Fleck's 'SYNTHETIC DRUGS: A Handbook for Chemists, Physicians, and Pharmacists'. . . . Reviews of the book (since we don't have the 240 hours) say that it not only gives a concise, lucid summary of the CHEMISTRY OF DRUG MANUFACTURE, but a preface on the disease for which each drug is used. . . . It is necessarily short on newest antibiotics and steroids, but for \$12.50 it gives you a couple of thousand years of work.

The incidence of HISTOPLASMOSIS INFECTION, as shown by skin-test, in the area just south of the midwest is astounding. It is especially so since it was almost unknown a dozen years ago. . . . A central geographic core composed of Southern Illinois, Southern Indiana, and all of Tennessee, Kentucky, and Missouri is the most involved area. Between 70 and 90% of the adults show histoplasmin skin-sensitivity. . . . An area around this core, but extending farther south into Louisiana and Mississippi, shows 45 to 55% reactions. . . . Concentric areas around this second layer show a reduced incidence, with the New England, southeast, upper midwest, Rocky Mountain, southwest, and far west being listed as '0 to 10%'. The testing program is being carried on in schools, hospitals, sanatoria, and whole communities.

It is both fun and profitable to scan thru copies of ARIZONA MEDICINE for the past 7 or 8 years. (If you don't save them you should). . . . One can see the progress of medical ideas and practice in Arizona more quickly there than any other way. One can see the imprint of the several editors as the years go by, — Drs. Milloy, Foster, Neubauer. All good, each somewhat different. . . . One can also see the fine hand of John McMeekin, praised in print in 1954, and worthy of another laurel wreath (in case he hasn't had a raise.)

Outstanding MEDICAL NEWS IN SPORTS (or sports news in medicine) is to be found in SCOPE WEEKLY (Upjohn). A recent issue contained the

story of orthopedic and surgical conferences in one of the greatest fracture cases in years, — the cannon bone in the leg of Swaps, the 1956 'Horse of the Year'. . . . The x-rays were beautifully clear. The progress history was good. The technic of treatment was amazing, with a reinforced leg-cast, a body-sling to hold the leg off the ground, etc. It is interesting to know that screws and pins cannot be used on the weight-bearing bones of a horse, since no metal will support such an animal.

Another contact with our veterinary friends has been "Q-FEVER". The Wisconsin State Lab. of Hygiene (Dr. Stovall) has released the report of a three-year survey of dairy herds in eight counties in the southeastern part of the state. The study was done with the cooperation of the state-federal veterinary department. . . . Q-fever may be transmitted to man by milk or dust; 29% of the herds, and 8.6% of the cows were infected. . . . Pasteurization temperatures now used on milk effectively kill the organism. . . . The farmers have always had some kind of bacterial cross to bear. First it was TB, long since eliminated from that state. Then it was Bang's disease. Now it seems to be Q-fever.

LUNG BIOPSY has been made to seem more feasible by the report of Klassen of Ohio State. He did a biopsy in 120 cases where doubt existed after all other tests had been done. . . . The procedure was like that of a liver biopsy; the approach was made thru the 4th or 5th intercostal space; a blood loss of less than 50cc occurred; and there were no fistulae, even in tuberculous patients, due to instillation of chemotherapeutic agents.

A group in Los Angeles has reported a series of 10 patients (in CALIFORNIA MEDICINE) with advanced metastatic carcinoma of the breast. They were treated with BILATERAL OOPHORECTOMY AND ADRENALECTOMY. . . . Several points in the report give one reason to pause, — "gratifying clinical remissions" occurred in only 3 cases; the remaining 7 died of metastatic disease; indications for adrenalectomy before menopause are candidates who had a previous clinical remission from oophorectomy and then relapsed; the indications after menopause are not clear; and the management of 10 cases required a team of surgeons, an endocrinologist, radiologist, and pathologist.

This column contained a fairly long analysis of 'CHEMOSURGERY' about 4 years ago. It is the method developed by F. E. Mohs of the University of Wisconsin, and there are few people trained in its use in the U.S. . . . Now C. C. Thomas Com-



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MEDICAL DIRECTOR
DUKE R. GASKINS, M. D.

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Duke R. Gaskins, M. D.

DRG:sk

pany has published Dr. Moh's "Chemosurgery in Cancer, Gangrene, and Infections", a 314 page book which costs \$14.50. . . . I think if I had a 'rodent ulcer' of the face, or a necrotic toe, I would prefer this method of removal to any other.

If the National Vitamin Foundation is a synthetic group composed of people who make and sell vitamins, and if the objective of their public relations representatives is to stimulate discussion on the subject by responsible groups, then they have a good start. . . . The University of Michigan has just been host to a "Symposium on Endocrines and Nutrition". The papers had to do with diet and thyroid function, diet and adrenal function, and endocrine effect on vitamin requirements.

This column mentioned a future 'M.D. Medical Newsmagazine' last summer; retracted the mention (as a joke) at the request of M.D.'s editors; and now, with their permission, mentions the journal again. It will be published sometime in the next few months, says Dr. Felix Marti-Ibanez, president of M.D. Publications, Inc. The pilot-copy which we saw was not then supposed to be secret; it was very good, with a format like TIME Magazine; and it was quite unlike some of the other mags published by the parent company ('Antibiotics and Chemotherapy', quarterly reviews of several specialties, etc.). Some of these are dull and lonesome-looking journals, and one wonders at their function, and at the contrast with 'M.D.'

A panel session on **TREATMENT OF THE COMMON FORMS OF ARTHRITIS** was presented in the Ohio State Medical Journal for October 1956. Steroids, aspirin, etc., were discussed, but the conclusions on gold and phenylbutazone were most interesting. . . . There were five questions about gold. Gold therapy is still used in many clinics. With small doses and careful supervision toxic symptoms, though occurring in 30 to 40 per cent of the cases, are not serious and can now be successfully combated. The effects of gold are slow to appear but remissions following the use, although not permanent, may last for several years. Gold is particularly indicated after conservative measures have failed and steroids have proven ineffective. . . . There was lively discussion about phenylbutazone. The consensus was that it is a toxic, dangerous drug, highly overrated and which has limited value in peripheral rheumatoid arthritis, being effective in only 20 to 30 per cent of cases. It is very effective in acute attacks of gout where it should be used in large doses for short periods of time. Red blood cell count and differential white blood cell counts should be made every week for one month, every other week for three months and every month thereafter in order to detect the first signs of agranulocytosis. Phenylbutazone is sometimes effective for short periods in acute exacerbation of rheumatoid arthritis.

It requires a good, new, rolling cliché AGAINST THE USE OF TOBACCO to even get a hearing these days, since a great many mean things have been said and smokers apparently would keep on smoking if they grew a tumor on the end of their nose. . . . Dr. E. E. Menefee Jr. of Duke University seems to have hit the gong, however, when he told the Medical Society of Virginia "Victims of emphysema and chronic bronchitis HAVE TO CHOOSE BETWEEN BREATHING AND SMOKING!" . . . The use of filter-tips, pipes, and cigars is a temporizing measure, and will not do; they must give up tobacco completely. . . . And there's the rub. It's worse than trying to take food away from a fat person.

Twenty years ago was as recent as 1936, yet Health Information Foundation reports that three times as many PEOPLE ARE ADMITTED TO HOSPITALS each year as 20 years ago. The number of hospital beds has increased, but the turnover is responsible for the 21,000,000 admissions. . . . We are confused at times by the statements about the number of people in mental institutions, but they amount to only 2% of the total admissions; 95% go to general hospitals.

American physicians probably know less about HUNGARIAN MEDICINE than they have known about Hungary. . . . Chauncey Leake of Ohio State, formerly of Texas U., urges that we help Hungarian science survive, and abstracts a dozen articles from 'Acta. Med. Acad. Sci. Hungaricae'. They include the free amino acid content of lymph; effect of hypoxia on kidney functions; fluorine content of saliva in gypsies; pneumonia as cause of newborn mortality; isoniazid as a cause of ascorbic acid depletion of adrenals; the effects of histamine on capillary permeability; etc. . . . They are research-minded and modern, but it seems hard to say how we can help them, even indirectly, right now.

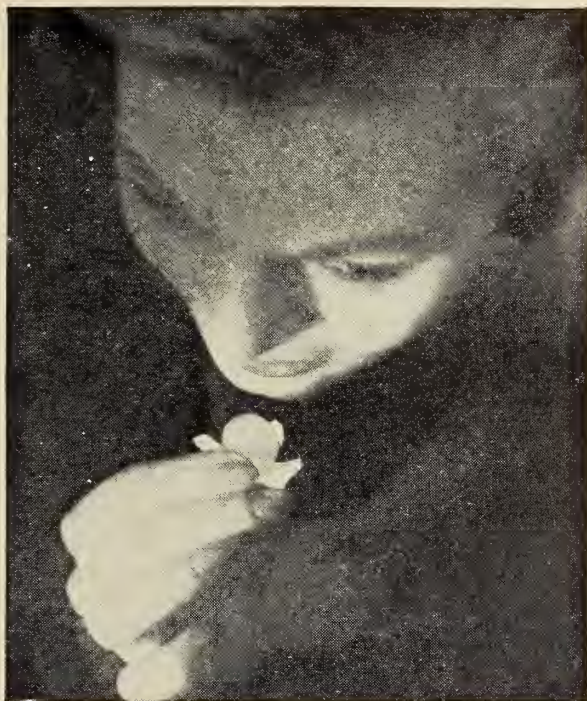
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HEALTH LEGISLATION

By Donald N. McLeod, M.D.

THE 84th Congress is now adjourned and during the past two years Washington analyzed and followed closely a total of 571 bills in the health fields, of which 25 were enacted. In the preceding congress 407 bills were reported and 20 became law.

Some of the more important bills which were passed include dependent medical care, career incentive pay, doctor draft extension, military status for public health service, and commissioning of Osteopaths. The above five bills may be included under military legislation.

Dependent medical care, better known as medicare, came into effect in Arizona on December 7, 1956. The doctor draft extension extended the draft act until July 1, 1957. Under Public Law 763, Osteopaths are now eligible (on a permissive basis) for the first time for medical commissions in all the military services.

Under public law legislation the health amendments (Omnibus Act, National Health Survey, Salk vaccine grants, Alaskan mental health, water pollution control, air pollution control, and Mental Health Survey) bills were passed. In the Health Amendments Act the following are provided: 1. An extension for two years beyond next July 1st of the Hill-Burton Hospital Construction Program, 2. Grants to states, groups, and individuals for research in mental health, 3. Trainee-ship grants for public health personnel, 4. Trainee-ships for graduate nurses, and 5. Earmarked funds for practical nurse training. The original Eisenhower Omnibus Health Bill included the twice rejected health re-insurance fund and mortgage loan guarantees for health facilities.

Other acts of general interest include laboratory research construction, a National Library of Medicine, narcotics control, and the Social Security amendments. This last controversial bill, which came within one vote of being defeated in the Senate this year, calls for a separate fund for payments to workers found totally and permanently disabled at the age of 50, an additional $\frac{1}{2}\%$ payroll tax effective January 1st, 1957 and a $\frac{3}{8}\%$ tax for the self-employed. It also includes dentists, osteopaths, lawyers, and other groups in the Social Security

System and lowers the retirement age for women to 62. There is increased federal payment to the states for persons on public assistance rolls and earmarked payments to states for the medical care of public assistance recipients.

In the 85th Congress which started the first of the year bills are certain to include federal aid to medical education, federal workers' health insurance, pooling arrangements among small health insurance companies, federal aid to local public health units, mortgage loan guarantees to private medical facilities, and controls over barbiturates and amphetamines.

Another item of interest is the amount which will be spent by federal medical health for the fiscal year of 1957. This year United States is spend in health fields alone, an average cost of \$15.17 per man, woman, and child. If wage earners are only considered they will be paying on the average of \$38.72 each to finance the government's health-medical operations. This is \$4.40 more than they paid last year. The total amount to be paid out in the year 1957 is \$2,558,168 which is distributed among 21 federal department agencies. In this spending the medical cost of Veterans Administration tops the list with the Department of Defense being second and the Department of Health and Welfare coming third. The Hill-Burton program is part of this latter agency.

LEGISLATIVE COMMITTEE

By L. D. Sprague, M.D.

THE LEGISLATIVE Committee of the Arizona Medical Association, Inc. met at the Westward Ho Hotel, Phoenix, Arizona on November 4, 1956. Doctors Wick and Duisberg presented to the Committee for discussion the proposed draft of the Mental Health Bill intended to amend the present Commitment Procedures Act. Following a lengthy discussion, review of the various provisions of the proposed bill and analysis of its many implications both favorable and unfavorable, the Committee moved that further consultation with legal counsel be obtained and some modification of the bill in its present form be ready to present to the Council of the Association.

Following a discussion in regard to the need of a special board to pass on sterilization pro-

cedures at the State Hospital, the Committee moved to appoint a subcommittee to investigate and recommend a proper course of action.

A proposed amendment to Medical Practice Act to provide for a "restricted license" to be issued to certain doctors of medicine serving in federal or state hospitals and/or public health departments was referred to legal counsel.

The Committee referred also to legal counsel for study and investigation, the problem of accepted standard nursing procedures as applied to nurses, interns, aides and other hospital employees which might be considered in violation of the Medical Practice Act. Legal counsel to report to the Committee at a future meeting its findings in this regard.

A letter from counsel for the Arizona Hospital Association relative to "rendering of unauthorized services by anesthesiologists" was reviewed. No action was taken by the Committee in view of the requirements of the Joint Committee on Accreditation and the College of Surgeons covering such services.

The State Medical Examiners System was discussed and the Committee moved that a group of pathologists be appointed to review the entire coroner system of the State of Arizona and recommend legislation if such is deemed necessary.

The Committee moved to lend reasonable support to the action of the Council of the Arizona Medical Association to the Occupational Disease Disability law and possible amendments there-to.

Discussion was held relative to the Communicable Disease Regulations and the serological examination referendum. No action by the Committee was indicated.

Dr. Nelson D. Brayton, Legislator from Gila County, presented his views on legislation which he considered important including, Air Pollution, Mental Commitment procedures, Alcohol Tax, House Bill No. 242 (introduced before the first session of the legislature) and the Financial Responsibility Bill which was also introduced during the last session of the legislature. Dr. Brayton recommended that the Association consider distribution to its members copies of legislation of interest to the medical profession as they are introduced.

PRESS-RADIO-TELEVISION CODE OF COOPERATION

Adopted in Principle by the Council of the Arizona Medical Association, Inc.

IN CONTACTS with the press, doctors need only remember to be friendly and courteous, and keep in mind the suggestions made in this Physicians Press-Radio and Television Code, which outlines what a doctor can ethically and legally reveal about a patient and his condition. In order to avoid the possibility of being misquoted, be sure to ask the reporter to read back his notes to you. Spell and explain any medical terms which you feel need clarification.

The Association's Executive Secretary functions as a clearing house for information requested by the press, and refers the reporters to those members of the Public Relations Board best qualified to provide the desired information. If you are uncertain as the proper policy on matters not covered by the Physician's Press Code, call the Executive Secretary who will advise you as to the proper procedure. If a policy has not already been established on the point in question, he will secure a ruling on the subject.

Doctors should realize that lack of facts sometimes forces a reporter to complete his story without authoritative information. Therefore, the doctor should give the reporter all possible information within the limits of the Code. The Physician must not infer that he alone has the cure for any certain disease. It is suggested that when a doctor has been called direct, and information is given to a reporter, that the Executive Secretary be notified in case there should be further developments.

The officers of the Association, Board Chairmen, or designated spokesmen of the Association, may be quoted by name in matters of public interest for the purpose of authenticating information given.

CONCERNING PRIVATE PRACTICE

The wishes of the attending physician or surgeon shall be respected as to use of his name or direct quotation, but he shall give information to the press and radio where it does not jeopardize the doctor-patient relationship or violate the confidence, privacy or legal rights of the patient.

If the patient is conscious and can communicate with the doctor or nurse in charge, or with relatives, he should be asked whether he will permit any information to be given. The patient's decision is final, except in cases of disaster where the doctor's judgment should prevail. If the patient is unconscious, the information outlined in the Code may be given without the patient's consent.

The one exception in this Code relating to information concerning private patients is Section 3-c, involving head injuries. A doctor should not make any comment as to the severity of head injuries, EXCEPT WHEN CONDITION IS DEFINITELY DETERMINED.

If the private patient agrees to permit information to be given, the doctor should strictly adhere to the procedure outlined in the Code.

CONCERNING POLICE CASES

All of the information outlined in the Code may be given without the patient's consent.

PRESS CODE. Information a Physician May Reveal to Press

1. Name: (a) Married or single, (b) color, (c) sex, (d) age, (e) occupation, (f) firm or company employing patient and (g) address.

2. Nature of the Accident: (a) injured by automobile, explosion, shooting; (b) if there is a fracture, it is not to be described in any way except to state the member involved, and (c) more than a statement that it is a simple or compound may not be made.

3. Injuries of the Head: (a) a statement which simply indicates that the injuries are of the head may be made; (b) it may not be stated that the skull is fractured; (c) no opinion as to the severity of the injury may be given until the condition is definitely determined, and (d) prognosis is not to be made.

4. Internal Injuries: (a) It may be stated that there are internal injuries but nothing more specific as to the location of the injuries, and (b) it may be stated that the condition is very serious or critical.

5. Unconsciousness: (a) If the patient is unconscious when he is brought to the hospital, a statement of this fact may be made; (b) the cause of unconsciousness, however, should not be given.

6. Cases of Poisoning: (a) No statement is to be made that a patient is poisoned; (b) no

information as to kind of poisonous substance, such as mercuric, chloride, phenol or carbon monoxide may be given; (c) no statement concerning the motive, whether accidental or suicidal, may be given, and (d) no prognosis may be made.

7. Shooting: (a) A statement may be made that there is a penetrating wound, (b) no statement may be made as to how the shooting occurred, i.e., accidental, suicidal, homicidal or in a brawl, nor may the environment under which the shooting occurred be given.

8. Stabbing: The same general statements may be made for stabbing as for shooting accidents.

9. Intoxication: No statement may be made as to whether the patient is intoxicated or otherwise.

10. Venereal Disease: The fact that a patient may have a venereal disease is his own private affair and should not be revealed to the press.

11. Burns: (a) A statement may be made that patient is burned, also the member of the body involved; (b) a statement as to how the accident occurred may be made only when the absolute facts are known, and (c) no prognosis may be given.

12. Attending Physician: Hospitals may give to the representatives of newspapers the name of the attending physician of private patients and refer such representatives to the physician for information about the case, but the newspapers shall not use the name of the physician without his consent. (a) The hospital staff may give information to the press on the condition of private patients, if such information has been made available to the staff by the attending physician.

13. Pictures: When newspapers request the privilege of photographing a patient in the hospital, such permission will only be given (a) if in the opinion of the doctor in charge of the case, the patient's condition will not be jeopardized, and (b) if the patient (or in case of a minor, the parents or guardian) are willing to have a photograph taken.

14. Deaths and Births: The death of any patient is presumed to be a matter of public record. Where the patient dies in a hospital, the hospital spokesman should make the announcement. Births likewise are a matter of public record, and when they take place in a hospital, the hospital makes the announcement. A doctor

should not release any information concerning a birth without the mother's consent.

15. Public Personalities: In a case where a public personality in whom the public has a rightful interest, the nature of the illness, its gravity, and the current condition of the patient should, whenever possible, be revealed if the patient or his family will give their consent. If it appears to the doctor that such information would not harm the patient in any way, he should endeavor to secure authorization from the patient or his family for release.

In cases of unusual injury, illness, or treatment, and any scientific information which will lead to a better public understanding of the progress of medical science, the physician should advise the Medical Association so that appropriate information may be released for publication.

RADIO AND TELEVISION

For purposes of clarity the medical association outlines the following principles to guide physicians who appear on TV or radio programs.

(a) Doctors of medicine are expected to refrain from sponsoring products directly or by implication that are not accepted by the medical profession; i.e., patent medicines.

(b) When introduced as a doctor, such individual can not escape the implication of representing the medical profession and his conduct should be in keeping with the high standards of the profession.

(c) Sound judgment, good common sense and adherence to the Principles of Professional Conduct are expected of any physician when appearing on radio or television in whatsoever capacity.

CIVIL DEFENSE

SPEAKERS at the Seventh County Medical Societies' Civil Defense Conference, held in Chicago, were in complete agreement on one point: physicians will have to revise their attitudes concerning patient care in case of a large-scale national disaster.

The Conference, which was sponsored by the A.M.A. Council on National Defense, was attended by representatives from 115 county medical societies of 30 states. There were several panel discussions covering a wide variety of problems associated with medical care during

a national disaster. In connection with patient care, speakers agreed that:

A doctor will have to learn to sort his patients, reversing the old tradition of treating the most seriously injured first. Instead, he will have to treat first those needing the least amount of care, leaving those requiring complicated time-consuming procedures until later. This, it was explained, will assure early return of the greatest number of persons to some form of duty — either combat or rescue.

In addition, the speakers agreed, doctors will have to realize that much of the medical attention and care will have to be given by persons outside of the profession because there won't be enough doctors to go around. For this reason, speakers urged that first aid training programs for lay persons get underway immediately.

And, the speakers said, too, doctors working at full speed during any emergency will have to play the role of psychiatrists since they will see many people who are not actually hurt, but who will be suffering from what is known as "disaster fatigue," a condition described as a temporary breakdown of emotional control. They usually recover in a short time.

The conference was also told that so-called "support areas" should give serious thought to stockpiling of necessary medical equipment, and training first-aid workers. A "support area" embraces cities and towns 30 to 50 miles from a target.

The conference adopted two resolutions for subsequent action by the A.M.A. Council on National Defense. One recommended that narcotic repositories be set up within each state to insure an available supply immediately in case of a national emergency. The other urged appointment of an assistant administrator in the Federal Civil Defense Administration who would be responsible solely for the handling of medical matters.

Book review "Epileptic Seizures" that appeared in the December, 1956 issue of Arizona Medicine on page 541 was reviewed by Robert A. Price, M.D.

God and the doctor we alike adore
When on the brink of danger, not before.
The danger passed, both are alike requited
God is forgotten and the doctor slighted.

Euricius Cordus

Translated by Chauncey Leake.

MANAGEMENT OF MASS PSYCHIATRIC CASUALTIES*

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IN THE event of atomic warfare, military medicine will be confronted with the difficult task of caring for mass casualties which in numbers and rapidity of production far exceed any of its previous experiences in conventional combat. Part of this medical responsibility will consist of relatively uninjured persons with varying degrees of mental incapacity due to the psychological trauma that inevitably accompanies exposure to massive physical destruction. This aspect of the management of mass casualties assumes major military significance in atomic attack for only by the efforts of physically intact survivors can there be prompt life-saving aid and rescue of the severely injured or effective reorganization for defense against an immediate enemy assault to exploit the tactical situation.

A reasonable forecast of the mental abnormalities to be expected under conditions of nuclear warfare can be inferred from past experiences with similar episodes of catastrophic trauma. Relevant data for this purpose are available from: (a) conventional combat, (1) (2), (b) civil disasters, (3) (4), (c) aerial bombardment, (5), and (d) atomic bombing of Hiroshima and Nagasaki. (6) (7) (8) Analysis of the foregoing traumatic situations permit the following general conclusions relative to behavior under severe external danger, irrespective of the causative agent or the culture of the individuals involved.

1. Instances of mass panic are relatively uncommon and mainly occur under circumstances where there is partial entrapment. (9)

Panic is usually defined as uncontrolled flight behavior or frantic purposeless activity. Favorable conditions for mass panic are established when a poorly led or an unorganized aggregation of individuals are faced with presumed or actual imminent destruction in an environment where there is a rapidly narrowing or limited escape route but one believed open to safety. Under these circumstances, there is pre-

cipitous flight to and if possible through the escape channel in order to avoid entrapment. But when the escape route is closed or becomes jammed, the momentum of the original drive toward safety continues its forward urging force with blind irrational activity. Such panic behavior quickly becomes widespread. Individuals involved are pushed and trampled upon, and rational thought is lost as other possible means of escape are not explored or utilized if available. It should be recognized that precipitous flight to avoid an immediate threat is not panic so long as such behavior is controlled or directed away from danger. Indeed, instantaneous flight may be the best adaptation for survival in many traumatic situations.

2. Major and persistent mental illness, such as psychoses, prolonged depressions and chronic neuroses are not produced by the psychological trauma of acute catastrophic events. The incidence of these psychiatric diseases was not increased by frequent aerial bombardment in England, Germany, and Japan during World War II. (10) (11) (12) Nor did such cases arise in any appreciable numbers from, conventional combat, civil disasters, and the atomic destruction of Hiroshima and Nagasaki. Apparently, the classical mental disorders are caused mainly by internal psychic conflict rather than external danger.

3. Any temporary breakdown of self-control is the characteristic and most frequent psychiatric abnormality noted in traumatic situations. (13)

This transient mental disorder is a direct consequence of external stress and commonly occurs during or shortly after the danger impact although cases may originate in the anticipatory period of threat prior to actual trauma. Individuals so affected, exhibit disturbances of function that vary in severity from stunned mute behavior or uncontrolled purposeless movement, to trembling helplessness, apathetic depressed states, inappropriate activity, or preoccupation with bodily discomfort due to increased emotional tension. Typically, such disorders are

* Presented at the 62nd Annual Convention of the Association of Military Surgeons of the United States, Washington, D. C., 8 November 1955.

fluid, changeable and self-limited, lasting for minutes, hours, or days.

4. Most, but not all persons experience disagreeable somatic and/or psychic sensations of fear when exposed to severe external danger. (14) (15)

The presence of fear does not prevent effective and even courageous activity. However, the accompanying subjective discomfort of fear can only hinder rather than aid the individual in his adaptation to a stressful environment. It is believed that a sufficient intensity of fear with its painful inhibitory effect is the usual precursor out of which arises the temporary mental disruption that is characteristic of major trauma. Therefore, measures to reduce the incidence of fear reactions are of vital importance in the prevention of non-effective behavior due to psychological reasons.

5. States of increased apprehensiveness frequently follow intimate personal involvement with catastrophic trauma. (16)

These residual reactions exhibit undue sensitivity to these external stimuli which can be associated with the previous traumatic episode. Usually such apprehensiveness does not prevent effective function, but in some persons the resultant increased level of anxiety produces insomnia, heightened irritability, poor appetite, weight loss and diminished work efficiency that may persist for many weeks. Individuals with severe apprehensiveness may absent themselves from work in a potential target area or seek relief by moving to a place of presumed safety. Residual anxious states are most apt to arise in persons who suffered intense fear, helplessness, or emotional breakdown during the traumatic event. In most individuals, such chronic apprehensiveness gradually diminishes over a period of weeks or months.

6. Docility and increased suggestibility are common behavioral characteristics of persons under disaster conditions. (17)

The fact that most participants of a dangerous or threatening situation can be readily influenced has important implications for the employment of communication facilities and leadership in the prevention of non-effective behavior.

The material thus far presented clearly indicates that the principal psychiatric problems produced by intense danger include temporary states of mental breakdown and residual se-

quelae of chronic apprehension. Similar psychological difficulties should be expected in atomic warfare. Before considering the management of the above psychiatric disorders, it will be profitable to explore the mechanisms behavior under stress in order to establish a rational basis for the methods of prevention and treatment that are proposed in this presentation.

Behavioral responses to environmental change can be regarded as a function of the communication process both within and outside the person. For explanatory purposes, the individual's communication or mental process relative to external stimuli, can be divided into three sequential time phases, namely perception, evaluation, and initiation of action. Usual or innocuous environmental changes generally evoke rapid appropriate responses when needed, in which the evaluatory component of the mental process plays little or no role as such, because of automatic decision making mechanisms that have been established by prior learning. However, new and abrupt external change requires the function of evaluation and, consequently, there is an appreciable time lapse exhibited by most persons in their response to unusual stimuli. When an abrupt environmental change is associated with a serious threat to life, the mental process is significantly altered so that the response may be either accelerated or inhibited. This well known and seemingly paradoxical phenomenon has been explained (18) by assuming that danger first produces an alerting action which operates simultaneously upon the several components of the mental process to: (1) focus attention only upon the pertinent elements of the threatening environment, thus narrowing the field of perception, (2) facilitates evaluation so that rapid decisions can be made, and (3) mobilizes the bodily systems for heightened and sustained activity. In brief, the alerting action is an effective biological mechanism which prepares the person for the traditional flight or flight patterns of behavior that are necessary for survival under dangerous conditions.

When an individual cannot cope with the threat either because of its magnitude, or other unalterable circumstances, or lack of confidence, then the urging force of alertment continues to press for action and reaches awareness as the distressing somatic, and mental sensations subsumed under the term, fear. Fear operates

to inhibit the mental process, perception becomes uncertain, and evaluation more difficult. Even minor decisions cannot be made, as exemplified by the frequent occurrence of docility and suggestibility noted among disaster victims. Similar inhibitory phenomena occur in the bodily sphere, as evidenced by weakness of the extremities, giddiness, constricted speech, and labored or difficult respiration.

On the basis of the above concepts supported by observations of combat and civil disaster, behavior under sudden impact of danger can be reconstructed as follows: In approximately 15-25% of persons subjected to an abrupt threat, prompt purposeful responses are evoked which continue into sustained effective action. (19) (20) These aggressive individuals apparently have an increased capacity for utilizing the facilitory properties of alertment to quickly grasp the relevant details of a dangerous situation and make rapid appropriate decisions which are promptly translated into immediate action. Such effective participants are usually "too busy" to remember experiencing subjective fear during the emergency period, although soon after the danger has passed, some may note fear reactions upon contemplating a narrow escape, while others seem excited or even elated as they repeatedly discuss the events that have recently transpired.

The remainder and majority of persons confronted with sudden danger are stunned and bewildered as they require an appreciable time interval to evaluate the threatening situation during which there may be quick involvement turning or crouching due to alertment. With the passage of varying but usually brief periods of time and a consequent better grasp and evaluation of their surroundings, most persons regain sufficient self-control to permit rapid goal-directed efforts such as movement away from danger. Military experience strongly indicates that with resumption of purposeful activity, fear is diminished or dissipated. When an individual responds correctly to the urging demands of danger, tension is discharged. Conversely, inaction under threatening circumstances fosters the building up of fear which further increases interference with internal communication and thus a vicious cycle is established with worsening behavior.

Psychological breakdown occurs in individuals subjected to severe trauma who are unable to

respond with appropriate evasive or aggressive action and cannot tolerate the consequent intense fear or feeling of catastrophic disorganization. Individuals so affected do not suffer a literal breakdown of mental function, but regress to a more primitive behavioral pattern that permits a decrease of personal involvement with intolerable reality even though such behavior may be deleterious insofar as survival is concerned. The mute stunned reaction, common in disaster, illustrates the meaningful nature of these stress induced psychiatric casualties. Here the involved person is seemingly isolated from the chaotic situation by the apparent blocking of all incoming stimuli. Such cases are described as, blank, unemotional, dazed, unresponsive to questions and oblivious of painful injuries that may have been incurred. (21) Less severe forms exhibit childish dependent behavior manifested by helplessness, trembling hysterical paralysis or marked docility.

Attention can now be directed to multiple elements of the traumatic situation which influence the frequency of psychiatric casualties.

1. Intensity and duration of the external trauma.

Increasing magnitude of danger reduces opportunities for effective response and thus a greater likelihood of fear reactions and psychiatric casualties. In traumatic situations of brief duration, favorable conditions are soon re-established for the resumption of effective behavior; whereas with prolonged danger, it is increasingly difficult to maintain appropriate activity and thus a higher incidence of fear and psychological disorders is to be expected. Associated with the intensity of danger is the degree of personal involvement experienced, such as being knocked down by blast, buried in rubble, injury by flying missiles and the like which has given rise to the concept of the "near miss" and the "remote miss." (22) Military and civil stress situations are replete with examples which demonstrate that the "near miss" experience is far more terrorizing than the "remote miss" episode which in contrast tends to promote confidence that the particular danger can be successfully mastered. Often present in a "near miss" event is the sight of mangled bodies, mutilation, and other injuries which are even more devastating when loved ones, friends, or buddies are involved. "Near miss" experiences which are not accompanied

by observation of injured casualties can be more easily tolerated.

2. Preparation and training.

It has been pointed out that failure of an adequate response to danger evokes inhibitory fear reactions that render the exposed individual vulnerable to psychological breakdown. Clearly, a built in or previously prepared appropriate behavioral response is required in most persons for effective adaptation under traumatic circumstances. Such preparation and training should include measures to be taken immediately upon awareness of atomic attack as well as evasive or defensive precautions that can be employed in any warning period that may be made available. Training of this type is similar to that required for fire, gas attack, ship disaster at sea, and other emergency situations where there is insufficient time for evaluation and a pre-set pattern of action is of prime necessity to prevent indecision, and helplessness. Training should also include sufficient knowledge of the effects of atomic weapons, the fall out problem, and practiced field methods of personal protection. Equipped with this information, the individual again deals with a predictable environment which, no matter how terrifying is less fearful than unknown danger. From the standpoint of prevention the single most important favorable influence upon behavior in atomic stress lies in training and preparation for such an eventuality.

3. Warning.

Even a brief warning period can enable prepared and disciplined groups to partially execute planned protective measures, along with mobilization of pre-set behavior for prompt action following the nuclear explosion. For untrained persons, a short period of warning before attack may precipitate indecisive flight or fear induced paralysis either of which is deleterious for effective function or survival.

Untrained groups necessarily require a longer warning interval in order to gain sufficient distance from the target area or receive information as to the best possible protection that can be employed under the existing circumstances.

4. Communication.

Human beings are poorly endowed insofar as sensory organs are concerned for the perception of danger unless their immediate surroundings have been radically altered. Significant minor or gradual changes are commonly over-

looked or attributed to innocuous events in order to deny sources of anxiety that would disturb emotional tranquility. To overcome deficiencies in human perception, sensitive mechanical means of detection have been devised, but a communication network is needed to transmit the data thus obtained to all persons concerned. It should be apparent that much depends upon the efficiency of the communication system to transmit timely and accurate information.

Like perception, the evaluatory portion of the mental process is also commonly impaired under stressful conditions. Here too, communication can be a major influence in determining behavior by transmitting pertinent information required for adequate evaluation of the traumatic situation or by directing the specific action to be taken. Under stressful circumstances, experience has demonstrated that not only must the clarity and specificity of information furnished be of a high degree, but messages should be frequently repeated in order to counteract the disorganizing effects of fear which interfere with capacity for retention or recall of recent memory.

5. Leadership.

In emergency circumstances, the leader may be regarded as an essential link or agent of the communication system who interprets transmitted information together with data gathered directly from the environment and indicates to others by word and action the proper responses and behavior to be followed. Since persons under stress exhibit a temporary impairment of communication with the environment or within their own mental organization, they seem to be in poor contact with their surroundings and manifest a high degree of indecision, docility, and suggestibility. Under these conditions, the demand for guidance and information is so great that leaders would arise even if they are not formally designated. In fact, such "emergent" leaders have been regularly noted in civil disasters as well as in combat. (23)

6. Group identification.

Previous traumatic experiences indicate that individuals are better able to tolerate danger in the company of others who are similarly involved. In fact, persons confronted with a common menace literally and figuratively move toward each other for mutual protection and support. This phenomenon has been regularly

noted in combat and was also reported from England during World War II where community shelters were preferred over individual types of protection, despite the added personal discomfort. (24) From the standpoint of communication, members of the group serve each other as verbal and non-verbal sources of information that may initiate and maintain constructive activity or provoke apprehension and precipitate non-effective behavior. With continued sharing of common hardships and danger, there is produced a cohesiveness or unity of group members which in military operations have been found to exert a powerful influence for effective function during severe stress. Such group identification establishes a code of conduct that continues to operate even under catastrophic conditions. In effect, group unity tends to correct for personality inadequacies such as egocentricity, timidity, seclusiveness, and lack of consideration for others.

Prevention.

From the foregoing discussion of elements in the traumatic situation which influence behavior, it is evident that measures to lessen psychiatric disorders in atomic warfare lie within the province of command and cannot be a primary medical function. In this respect there is no essential difference between preventive psychiatry and other programs of preventive medicine in the military service which also require implementation that can only be initiated and maintained by command decision. The medical officer serves as a technical advisor to the commander in matters of physical and mental health. It is herein submitted that as part of this staff function, the medical officer should be familiar with the determinants of behavior under adverse circumstances in order to point out areas where remedial action is indicated and to perform such other advisory duties as may be necessary to assist the commander in conserving the effective strength from a psychological standpoint.

Treatment.

In considering the treatment of psychiatric casualties, it is important to reiterate the recognition that these temporary states of mental disruption are acute fluid adaptive reactions to danger which are self-limited and can be expected to begin improvement with the cessation of external threat. Methods of treatment herein proposed are derived from considerable

experience with similar emotional disorders of combat (25) and are based upon the following operational principles.

1. Decentralization.

This axiom of therapy insists that treatment facilities be made available as soon as possible and as near as practicable to the scene of atomic disaster. Benefits that can be expected from a policy of decentralization include the following:

a. Treatment can be given early, during the fluid state when psychiatric casualties are readily influenced by suggestion and other simple measures to recover self-control thus circumventing the effect of time and continued helplessness from causing a fixation of the inability to overcome danger that is mainly responsible for sequelae of chronic apprehension.

b. Psychiatric problems are prevented from further taxing evacuation channels and hospital facilities which will be fully occupied with the physically injured.

c. Rapid restoration to duty at this level can provide manpower who are urgently needed for defense and rescue.

2. Expectancy.

This principle of therapy refers to the importance of verbal and non-verbal communication addressed to patients by treatment personnel. It is based upon the previously stated marked suggestibility and indecision exhibited by psychiatric casualties. Thus, military experience demonstrates that situationally induced acute mental disorders worsen or improve depending upon what is expected of them by persons responsible for their treatment and disposition. A treatment environment which communicates tension, helplessness, or disability continues symptoms and non-effective behavior. Conversely, a calm acceptance of the patient and his manifestations as a temporary incapacity from which rapid recovery is expected after a brief rest, can produce the desired improvement within hours, particularly when supervised or directed activity is promptly instituted to further confirm expectancy for recovery. Non-verbal attitudes and actions are far more effective than words in breaking through the communication barrier of patients. Expectancy for recovery is also communicated by the terms used to designate these disorders. Emotionally charged terminology such as shell shock, psychoneuroses, concussion, blast injury,

and the like imply severe mental or physical damage from which recovery is uncertain and residual defects are probable. Already the term radiation sickness has become quite well known and could readily come into widespread use as a catch all category for all manifestations in atomic warfare which do not fit a known medical entity. It is, therefore, imperative that terminology such as combat fatigue be continued for psychiatric casualties in atomic warfare since this designation fosters expectancy of a transient benign disturbance due to logical situational causes which is readily recoverable and leaves no permanent defect.

3. Brief simplified methods.

Any prolonged or involved treatment program either could not be adequately performed at a decentralized level or if attempted, would nullify the principle of expectancy by its implication of an illness sufficiently serious to warrant such an elaborate effort. Prior experience with complicated treatment techniques which rely upon drugs, prolonged bed care, subshock insulin, or frequent psychiatric interviews have indicated that only mediocre results were obtained despite the large outlay of personnel and supplies. On the other hand, a brief rest of several hours, along with measures to alleviate hunger, pain, and minor injury when performed at a decentralized level in an atmosphere of expectancy for recovery, provide the most favorable conditions for a resurgence to functional capacity. Drugs should be used sparingly and in small doses. Relaxation can be obtained with warm drinks of milk, cocoa, soup and the like. If time permits, there should be included, a brief interview period in which the patient is allowed to give freely his account of the traumatic event in order to facilitate the ventilation of emotionally charged feelings and attitudes that may be responsible for maintaining withdrawal from painful reality. Ventilation aids in re-establishing communication with the patient who can then receive information and be motivated to participate in the rescue or defense effort.

The last step of simplified treatment is directed or supervised work. With resumption of purposeful activity, communication is further improved, and reorientation to group and social obligations is facilitated.

A sufficient number of psychiatrists neither will be available for the management of mass

psychiatric casualties nor does the operation of a simplified program require the services of such specialists. From the traditional military standpoint, the control of behavior under battle conditions is necessarily the responsibility of all persons charged with the function of leadership and medical care. As in previous warfare, milder instances of "freezing," indecision, helpless attitudes, or inappropriate activity can be best handled by commissioned and non-commissioned officers, buddies, and medical corpsmen who are optimally located in time and space to favorably influence or direct temporarily disorganized persons by word and action to assume a more effective role. The more persistent psychiatric casualties should be treated at the nearest medical facility which in a tactical situation is usually the Battalion Aid Station. If nuclear weapons are used against support or rear zones, it is likely that a hospital facility would provide immediate medical care.

In either event, the prompt treatment and restoration to duty of psychiatric casualties should be a recognized responsibility of the first medical facility to receive early cases of this category. In atomic warfare, the battalion surgeon must assume more and more the role of a front line psychiatrist in order to conserve the effective strength of his unit at a time when every man is vitally needed. Medical evacuation under such conditions will be a difficult procedure at best and initially should be reserved for the physically injured. Severe or persistent cases can be sent to the division psychiatrist at the clearing station level when transportation is available. The division psychiatrist should serve also as a professional consultant to other medical officers and advise commanders in ways and means of preventing psychological disorders.

It is recommended that a provisional psychiatric and welfare section be established in any hospital that becomes a front line medical unit due to nearby atomic attack. Such a function should be located adjacent to the main facilities for the physically injured and operate with a minimum of equipment and personnel. This section can be staffed by Medical Service Corps Officers trained in social work and clinical psychology, Red Cross personnel, chaplains, and several enlisted technicians along with a nurse to care for minor injuries. The assigned psychiatrists should serve only as consultants to

this section, for as medical officers, their services can be more profitably utilized in the treatment of physical casualties. After the emergency period has passed and the hospital situation has stabilized, psychiatrists as well as other specialists should resume their characteristic medical function.

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AVAILABILITY OF RADIOACTIVE ELEMENTS IN ARIZONA

THERE are facilities in Maricopa County for the performance of most of the accepted Radioisotopic methods of diagnosis and treatment. The purpose of this note is to list briefly the isotopes that are available here and the conditions in which their use is generally accepted.

RADIOACTIVE PHOSPHORUS P32

Sodium Radiophosphate is thought in most clinics to be the treatment of choice in Polycythemia Vera. It is not of value in acute leucemia but often is useful in the management of chronic leucemia. This isotope has an affinity for rapidly growing tissue and has been used in association with conventional radiation therapy in the treatment of lymphomas and other malignancies.

In the form of chromic radiophosphate, P32 can be instilled into pleural and/or peritoneal cavities in the treatment of malignant effusions.

Although still under study, P32 has not been found of great value for diagnosis. The one established use is in the diagnosis and localization of tumors of the orbit.

RADIOACTIVE IODINE I-131

I-131 is probably the most useful isotope in medical use. It is of particular value in the study of thyroid function which however is so complex, that it can not be anticipated that a single test will be all-inclusive. The rate of uptake of I-131 by the thyroid gland and the total uptake in a standard period of time provided reliable criteria of hyper-thyroidism in a high percentage of cases. The conversion of I-131 into PBI 131 as evaluated by blood studies gives additional information in difficult cases. A scan of the neck is particularly useful in evaluating the function of thyroid nodules and in the differentiation of Graves Disease from toxic nodular goiter. The procedure is also useful in the detection of aberrant thyroid tissue and functioning thyroid carcinomatous metastases. Cancer of the thyroid can not be diagnosed or excluded by the use of I-131 but a nodule is less likely to be cancerous if it is functioning and particularly if hyper-function is present.

In the diagnosis and classification of hypothyroidism, I-131 studies are of considerable value particularly when repeated after TSH (Thyroid stimulating hormone) stimulation. I-131 is particularly valuable in confirming the diagnosis of thyroiditis and of thyrotoxicosis factitia.

I-131 is generally accepted as an effective therapy in hyper-thyroidism. While there is still debate as to the precise conditions in which it should be used, there is no doubt that when used judiciously, a valuable therapeutic aid has been added to our armamentarium.

Mary L. Sussman, M.D.

* * *

At the present time there are two isotopes which are available for use in Pima County. These are the radioactive phosphorus and radioactive iodine.

RADIOACTIVE PHOSPHORUS

It is well known that radioactive phosphorus is the treatment of choice of Polycythemia Vera, having been likened to the use of insulin for Diabetes. Usually a single dose will give a

remission which will last for years. Radioactive phosphorus is also useful in the treatment of the chronic leukemias, but shows no usefulness whatsoever in the acute leukemias. Diagnostically there is little use of radioactive phosphorus, although it can be used for evaluation of tumors fairly near the surface of the anterior portion of the eye, and is also useful for the localization of brain tumors at surgery.

Radioactive phosphorus may be administered either orally or intravenously. In the usual dosages there are no significant signs of radiation sickness or toxicity. Of course, overdosage may produce an abnormal blood picture due to its depressing effect upon the hematopoietic system.

RADIOACTIVE IODINE

Radioactive iodine is of course rather well known for its use in diagnosis as well as treatment of malfunctions of the thyroid gland.

In Pima County there are at the present time only two sources of radioactive isotopes. Dr. James Fritz has an authorization for the use of radioactive iodine and Dr. Wesley Fee has an authorization for the use of radioactive iodine and radioactive phosphorus.

Wesley S. Fee, M.D.

NATIONAL MEDICAL FOUNDATION FOR EYE CARE

ANNOUNCEMENT was made 11/15/56 of the establishment of the National Medical Foundation for Eye Care, a non-profit scientific and educational institution, incorporated in New Jersey. The Foundation has been organized by ophthalmologists of the country to provide American ophthalmology with an agency to present to the public generally and to fellow physicians pertinent information on the care and treatment of the eyes.

Dr. Ralph O. Rychener of Memphis is president of the Foundation; Dr. Edwin Forbes Tait of Norristown, Pa., vice president, and Dr. Charles E. Jaeckle of East Orange, N. J., secretary-treasurer.

Members of the Board of Trustees, in addition to the above named, are Dr. Alson E. Braley of Iowa City, Iowa; Dr. Frederick C. Cordes of San Francisco; Dr. Paul Chandler of Boston; Dr. J. Spencer Dryden of Washington, D. C.; Dr. Harold F. Falls of Ann Arbor, Mich.; Dr. Everett L. Goer of Houston; Dr. Erling W.

Hansen of Minneapolis; Dr. A. D. Ruedemann of Detroit; Dr. Barnet R. Sakler of Cincinnati, and Dr. Derrick Vail of Chicago.

In a special statement announcing the Foundation's establishment, Dr. Rychener declared: "American ophthalmologists have long recognized an urgent need for an organization whose principal function will be to interpret the basic professional and scientific standards of good eye care for the American people, both to our fellow physicians and to the people whom we serve."

"The National Medical Foundation for Eye Care will seek to serve the public interest by helping the people to understand the educational qualifications and the professional functions of physicians specializing in ophthalmology, and the functions of related technical and ancillary personnel who assist them. The Foundation will also endeavor to keep our colleagues in the medical profession informed concerning the problems confronting ophthalmology in its efforts to fulfill its mission as a member of the team of recognized medical specialties serving the American people."

Dr. Rychener revealed that the Foundation is now enrolling its charter membership, and he invited all ophthalmologists and other physicians interested in eye care to become charter members of the Foundation.

Applications are available through Dr. Charles E. Jaeckle, secretary-treasurer, at 136 Evergreen Place, East Orange, New Jersey. The Foundation will establish an administrative office in New York City about January 1st, 1957, and will also make available an Affiliate Membership for persons other than doctors of medicine who are interested in aiding the purposes of the Foundation, Dr. Rychener announced.

The object and purpose of the Foundation is to advance the public welfare by:

1. Gathering, receiving, assembling and studying information relative to eye care.
2. Fostering and/or engaging in investigations and research in all aspects of eye care.
3. Sponsoring studies of educational, socio-economic and scientific factors affecting eye care.
4. Issuing reports and otherwise disseminating information relative to eye care to the general public and to members of the medical profession and ancillary workers.

5. Promoting the conservation of vision and the prevention of blindness through the wider dissemination of knowledge of the eye, its defects, disfunctions and other diseases and their relation to general health.

6. Promoting a more effective utilization of the scientific knowledge of ophthalmology and the other related branches of medicine.

7. Generally performing any act, related to the foregoing, designed to present to the public generally and the medical profession, all pertinent information on the care and treatment of the eyes.

ARIZONA STATE BOARD OF PHARMACY

1028 E. McDowell Rd.
Phoenix, Ariz.

TREASURY DEPARTMENT
Bureau of Narcotics
Washington 25

Office of

Commissioner of Narcotics December 4, 1956
Mr. E. C. Mason, Secretary
Arizona State Board of Pharmacy
1028 East McDowell Road
Phoenix, Arizona

Dear Mr. Mason:

Reference is made to your letter of November 29, 1956, requesting to be advised if a pharmacist may fill an oral prescription for a permitted narcotic drug when the oral prescription is telephoned by the doctor's nurse.

The Federal statute permitting the filling of oral prescriptions for narcotic drugs is an exception to the general rule which requires a written prescription for narcotic drugs. The statute provides that in lieu of a written prescription, the sale, dispensing, or distribution may be made by a dealer to a consumer upon oral prescription of a duly registered physician, dentist, veterinarian, or other practitioner. IN THE OPINION OF THE BUREAU THAT REQUIRES THE PRACTITIONER TO TELEPHONE THE ORAL PRESCRIPTION TO THE DRUGGIST AND DOES NOT PERMIT A NURSE TO DO IT FOR THE PHYSICIAN.

Very truly yours,

G. W. Cunningham
Acting Commissioner of Narcotics

A.M.A. GIVES \$5,000 TO HUNGARIAN PHYSICIANS

ON THE final day of the Seattle session, the Board of Trustees announced that the A.M.A. was contributing \$5,000 to Hungarian physician refugees in Austria.

The \$5,000 check was dispatched immediately to the American embassy in Vienna with instruction to turn it over to the American Medical Society in Vienna.

But that is not the full story.

Within 24 hours after the money was cabled a message addressed to the House of Delegates was received in Seattle. It expressed "profound thanks" to "every member of the House of Delegates from the 300 Hungarian refugee doctors now in Austria."

Then, in a few days, came a lengthy letter from Dr. M. Arthur Kline, executive secretary of the American Medical Society in Vienna. He thanked the A.M.A. again for its financial help, and then painted a gruesome picture of a doctor's life during the revolutionary days in Hungary.

"Every hour," he said, "reports are being received in Vienna, telling us of the constantly increasing number of doctors who are escaping across the border and applying for refugee status in Austria. The reason for this panic-stricken flight is that the A.V.O. (Hungarian Gestapo or Secret Police) are arresting all doctors in Hungary who have treated injured Revolutionaries and who did not report the details, as required by law."

It was of course impossible for the doctors to do this, the letter explained, because "the number of injured was so numerous that most of the doctors worked around the clock, trying to cope with the catastrophe."

Dr. Kline's letter added:

"Practically every doctor in Vienna has opened his home to a Hungarian colleague and his family. In almost all cases, the Hungarians crossed the border penniless and with their families. In many instances, they carried their small children in their arms for distances up to 200 miles. . . .

"In addition to offering their homes, the Austrian doctors have all responded to our appeal by raising approximately \$8,000 to meet expenses in caring for our unfortunate colleagues. Considering the average income of the Austrian

physician, this sum constitutes a tremendous sacrifice. Each Hungarian doctor receives the sum of 500 shillings (approximately \$20) when he first registers with us in Vienna. Our \$8,000 was exhausted over two weeks ago.

"Medicine is a proud profession and we should particularly care for our own. The great majority of Hungarian refugees are workers and laborers and, as such, they will experience little difficulty in finding work. The doctors, however, most of whom speak only Hungarian, are naturally tremendously handicapped because of language and regulation difficulties.

"At the present rate of refugee doctors pouring into Austria, the A.M.A. sum of \$5,000 will not last more than five days. It seems that we shall be required to assist them for many weeks or perhaps months to come."

With that statement, Dr. Kline appealed for American contributions. His address is: Dr. M. Arthur Kline, Executive Secretary, The American Medical Society, 11 Universitätsstrasse, Vienna 1, Austria.

At the same time, President Ellsworth Bunker of the American Red Cross in Washington sent a letter to A.M.A. President Murray, asking doctors to contribute generously to the \$5,000,000 Red Cross fund for Hungarian relief.

"Because of your organization's traditional concern for our fellow-men and its fine record of support for humanitarian causes," the letter said, "I urge that you call the attention of your members to this special appeal."

FOUNDATION ANNOUNCES \$88,500 MORE IN GRANTS

CHICAGO — Assistance in the form of long-term, unsecured loans to 24 physicians for the establishment and improvement of 15 medical practice units was announced today by the Sears-Roebuck Foundation.

These loans, ranging from \$1,000 to \$10,000, were made under the Plan of Financial Assistance of the Foundation and are part of an annual grant to a revolving assistance fund. The loans totaled \$88,500.

The 15 loans just announced go to physicians in Oregon, Washington, Southeastern Kentucky, Minnesota, California, Mississippi, Georgia, North and South Carolina, southern Florida, New York, Rhode Island, and a suburban area of New Haven, Connecticut.

The Foundation made the first grant available in 1955. With today's announcement a total of \$261,000 has been granted in 36 loans to 52 physicians in 18 states. Thus far the majority of loans of assistance have gone to two types of physicians: graduating interns just establishing themselves in areas of medical need, and established physicians located in small communities, rural and suburban areas whose medical facilities are so inadequate it is necessary to rebuild in order to provide decent medical care.

Theodore V. Houser, president of the Foundation, also announced that applications are now being received for consideration during the first half of 1957 when approximately \$72,500 will be available for additional loans. Applications received prior to April 1st will be processed no later than June 15th. Physicians desiring to apply should have their plans well developed so that proper evaluation may be made. Applications may be obtained from state, county or city medical societies.

The purpose of this plan is to help physicians supplement personal and local financing which is inadequate to cover the entire cost of building, remodeling, equipping or establishing a medical practice. The Foundation hopes to be of aid in improving medical distribution and medical facilities in areas where there is a shortage of physicians and inadequate facilities exist.

The Foundation administers the plan, while the screening and actual selection of applicants is done by a 17 member Advisory Board of leading physicians from all sections of the country named by the Board of Trustees of the American Medical Association.

Resume Of Recent Meetings

RECENT ADVANCES IN NEUROSURGERY

By Charles W. Elkins, M.D.

THE AMERICAN Academy of Neurological Surgery convened for its eighteenth annual meeting at the Camelback Inn, Phoenix, on November 8th, 9th, and 10, 1956. More than one hundred members and guests, from this country and Canada, attended the meetings and exchanged ideas on many subjects, both clinical and experimental.

Sections of the meetings were devoted to problems such as embryology, physiology and surgery of the hypophysis; neurosurgery in children with special emphasis on newer methods for control of hydrocephalus; improvements of technic, diagnostic procedures and instruments; surgery for psychomotor epilepsy, and hypothermia and its role in protection of the brain from anoxia in the surgery of vascular lesions. A portion of the meeting was devoted to a general discussion of neurosurgical training programs.

Reviewing each valuable contribution must be reserved for other publications and many will be published independently. It is hoped, however, that the succeeding paragraphs will present the highlights and demonstrate the scope of this meeting.

It is now generally agreed that surgery of the pituitary gland has lost many of its hazards with proper preparation and postoperative treatment of the patient with ACTH and Cortisone. While Hypophysectomy for metastatic breast carcinoma is still in the clinical experimental stage certain conclusions may be drawn from the experience of several clinics. Generally, the procedure is most effective in prolonging life and arresting lesions after bilateral oophorectomy in the premenopause patient. Substitution therapy with Pitressin and whole pituitary seems to be effective in controlling diabetes insipidus and pituitary deficiency after severing the pituitary stalk and performing total hypophysectomy.

The treatment of communicating hydrocephalus in children has been a difficult problem over many years. Shunts from the subarachnoid space into practically every body cavity have been devised as a means of disposing of cerebral spinal fluid which is not absorbed in sufficient amounts thru normal venous arachnoid channels. It has been thought that if cerebral spinal fluid could be directed into a venous channel, it would most closely approach the physiological method of absorption. Recently and experimentally, the lateral cerebral ventricle has been drained into the right cardiac auricle thru the common facial vein and internal jugular vein. A sleeve valve in the plastic catheter prevents regurgitation of venous blood. Many believe that if the devastating process of progressive communicating hydrocephalus can be arrested for a time,

normal absorptive mechanisms may be initiated.

Psychomotor epilepsy with or without grand mal seizures has been successfully treated by surgical removal of portions of the temporal lobe in several clinics and at the Arizona State Hospital. Cortical electroencephalography is most useful in determining the amount of temporal lobe tissue to be surgically ablated. The best results seem to be obtained in those cases of observable disease of the lobe, particularly when there are atrophic areas present secondary to birth trauma.

Hibernotherapy or hypothermia and its role in protecting the central nervous system against the effects of anoxia, has created nation wide interest both in the laboratory and in the operating room. Much experimental work is being done and clinical application has yielded encouraging results. The prize winning essay demonstrated that with hypothermia, the usual cerebral infarct did not occur following ligation of the middle cerebral artery in dogs. It is thought that lowered metabolism of the brain under hypothermia decreases oxygen requirement of cerebral tissue and permits otherwise insufficient collateral circulation to be adequate. If this is proven to be a physiological fact, it carries tremendous implications in the future treatment of cerebral vascular disease and the effects of occlusive cerebral arterial disease. Clinically, at the present time, hypothermia offers the neurosurgeon a greater length of time in his operative approach to cerebral aneurysms and arterial-venous malformations. The brain may be rendered avascular by temporary occlusion of both carotid and both vertebral arteries for up to twelve minutes while the lesion is being attacked in a bloodless field. Apparently the time honored concept if irreversible brain damage following five minutes of anoxia must be altered.

Training programs for the future neurosurgeons are being surveyed and concepts are changing. It is recognized that this specialty is now being practiced in small communities and that only a few neurosurgeons will have the opportunity to gather large series of surgical cases in any given category. The training programs must now be adjusted to the situation and more attention focused on the preparation of the trainee to handle more diversified problems in the fields of medical and surgical neurology.

The meetings were dynamic and all who attended and participated departed with praise for the organization. It is hoped that the American Academy of Neurological Surgeons will return to Arizona.

RESUME OF WESTERN ORTHOPEDIC MEETING

By Alvin L. Swenson, M. D.

THE TWENTIETH Annual Meeting of the Western Orthopedic Association was held in Phoenix at the Arizona Biltmore Hotel from October 31 to November 3. It was considered a very excellent meeting by the 300 or more orthopedic surgeons from the western states.

The meeting got underway at noon on October 31 with a short business meeting. The scientific session started later that afternoon, and the first two papers were on back pain. Dr. Mensor of San Francisco read a paper entitled "Mobility Studies of the Lower Lumbar Spine in Relation to Low Back Pain". Dr. Wiltse of Long Beach had a paper on "The Etiology of Spondylolisthesis". There was quite a discussion about the whole low back syndrome in connection with these two papers. Dr. John Cooper of Honolulu read a paper to bring out the unusual relationship between the coracoid process and the clavicle in some cases and the occasional presence of a pseudarthrosis in this region to be the cause of shoulder pain. The last paper on the opening afternoon was by Dr. Bertram Krouse, Ph.D. of the Department of Anthropology of the University of Arizona, and his subject matter was the high incidence of congenital dislocations of the hip among the Fort Apache Indians.

The next morning an entirely new type of program arrangement was carried out. This program was carried out at a breakfast round-table discussion. The subject was generally the reconstruction of hips, and Carrol B. Larson, M.D., Professor of Orthopedic Surgery at the University of Iowa was the moderator. Papers were presented by Dr. Nash and Dr. Kirk Anderson of Seattle and by Dr. Urist of Los Angeles. These papers covered follow-up studies on hip prostheses and cup arthroplasties of the hip. Dr. Larson then summarized all of the findings and discussed reconstructive surgery about the hip and outlined a method of testing hips and evaluating them, both from the patient's standpoint and from the doctor's stand-

point, both before and after reconstructive surgery. Since the hip is a major weight bearing joint, very frequently only a small amount of improvement is appreciated by the patient.

The rest of that morning session was taken up with a number of papers on bone tumors. Some discussion ensued regarding the possible relationship of a single trauma and subsequent cancerous lesions in bones. Infections of bones were the general group of papers that followed and specifically for joint tuberculosis, the best results were obtained by the use of drug therapy and early surgery. Drs. Kortner and Schwartzmann of Tucson gave an interesting paper on "Bone Lesions in Disseminated Coccidioidomycoses". This subject was particularly interesting to all of the members since this condition is quite prevalent in the southwestern part of the country, as compared to other regions.

The second morning another breakfast round-table discussion was carried out. The subject of this discussion was "Neck Pain". Cervical strain and occipital neuritis as well as peripheral neuropathy was discussed. Following the breakfast round-table discussion, the general results of some amputations were brought up. Dr. Mazet of Los Angeles gave a paper on the study of the results of cenoplasty, and Dr. J. Warren White of Honolulu gave a paper on the self-contained below the knee amputation prosthesis. The rest of the morning then was turned over to the residents of orthopedic services in various western hospitals. Dr. Clausen of the San Francisco City Hospital gave an excellent paper on "Subcapital Fractures of the Femoral Neck and all of the Difficulty That Can Be Encountered With Such Fractures". He particularly pointed out the possibility of delayed aseptic necrosis and the relatively high percentage of non-unions that might occur. Dr. Wesley Hunter of the University of California Medical Center in San Francisco gave a paper to outline the treatment of "Solitary Bone Cysts". He again pointed out the likelihood of recurrences in younger children when the lesion was close to the epiphysis and the difficulty of getting a complete cure even with the most meticulous bone grafting methods. Two other papers were presented by Dr. Kernahan of the Childrens Hospital in Salt Lake City, Utah and Dr. Nore of the U. S. Naval Hospital in Oakland, California. The subjects of these papers were "Cor-

relation of Femoral Anteversion With Re-dislocation of Congenital Hips", and the second one was the discussion of "Neuroma in Clinical Orthopedics".

The final morning was taken up by two papers on cerebral palsy, and these papers merely outlined the existing knowledge on the types of athetosis and the significance of some of the primitive reflexes that are seen in cerebral palsy. Other papers that morning dealt with the treatment of isolated fractures of the greater trochanter as well as the more complicated intertrochanteric fractures. This paper about intertrochanteric fractures was a study of the treatment of such fractures at the Denver General Hospital and was read by Dr. Olshausen of Boulder, Colorado. A plea for the use of safety belts in modern cars was well covered by Dr. Stanley Sell of Idaho Falls, Idaho. With the use of safety belts, it is possible to reduce the number of fatal injuries and serious injuries from car accidents. The final paper was given by Dr. Robert Bingham of Riverside, California who discussed hot mineral baths in the treatment of orthopedic patients and discussed some general physical therapy measures.

Dr. Lytton-Smith was the President of the Western Orthopedic Meeting and was responsible for the excellent meeting that was put on and the fine way that it was handled. Dr. Schwartzmann had arranged all of the scientific papers, and he certainly had done an excellent job. Other members had worked equally hard at getting out a most unusual and excellent program booklet. This program booklet contained many color photos of Arizona scenes, and all of them had been taken from and donated by the Arizona Highways magazine. All of the local arrangements, including the golf tournament, the social events and many other activities during the convention, had been ably handled by other members of the Arizona Orthopedic Group which put on the program. A special thanks should be extended to all of the wives of the orthopedic surgeons in Phoenix who spent many hours helping carry out the functions of registration and helping organize many of the social events. The Arizona Group of Orthopedic Surgeons hope that they can get the Western Orthopedic Association to return for a second meeting in Phoenix within the next few years.

Future Meetings

**1957 ANNUAL MEETING
APRIL 10-13, 1957**

INTRODUCING Albert G. Bower, M.D., of Pasadena, California.

Doctor Bower is Clinical Professor of Medicine at the University of Southern California and also at the College of Medical Evangelists. He is Chief Physician in Communicable Diseases Unit at the Los Angeles County General Hospital. In World War I, he was Captain in the Medical Corps, Regular Army; in World War II, Captain in the Medical Corps, United States Naval Reserve, retiring as such thereafter. He is Past President (1939) of the Hollywood Academy of Medicine; member of the Los Angeles Academy of Medicine; Fellow A.A.A.S. and Life Fellow A.C.P.; Consultant to Hollywood Presbyterian, Huntington Memorial, Birmingham Veteran's, St. Luke's, St. Joseph's, Glendale Memorial and Glendale Sanitarium hospitals. Doctor Bower is also author of two books and numerous papers.



Albert G. Bower, M.D.

INTRODUCING Philip Thorek, M.D., of Chicago, Illinois.

Doctor Thorek was born in 1903 and graduated from the University of Illinois College of Medicine, receiving his doctor of medicine degree in 1931. He is Clinical Associate Professor



Philip Thorek, M.D.

of Surgery, University of Illinois; Professor of Surgery, Cook County Graduate School of Medicine; Diplomate, American Board of Surgery; Fellow, American College of Surgery; Fellow, International College of Surgeons; Fellow, American Association of Chest Physicians; American Board of Anatomists; Sigma Xi; Honorary Fellow, American Association of General Practice. He is author of the following books: "Anatomy in Surgery", "Diseases of the Esophagus", "Diagnosis in Surgery". Doctor Thorek is also the maker of medical films totaling a library of 68 subjects, which are made available to the medical profession.

5,000 FAMILY PHYSICIANS TO ATTEND MARCH 25-28 MEETING IN ST. LOUIS

KANSAS CITY, MO.—More than 5,000 of the nation's family physicians will attend the Ninth Annual American Academy of General Practice Scientific Assembly, March 25-28, 1957, in Kiel Auditorium, St. Louis, Mo.

The record-shattering attendance was today predicted by Mac F. Cahal, the Academy's executive secretary and general counsel. Each of the past four meetings has successively established a new attendance record.

During the four-day scientific meeting, the doctors will hear outstanding speakers discuss

important subjects including infertility, polio vaccination, and the "neglected" pediatric areas, the eyes, ears, and feet. They will visit 60 scientific and 260 technical exhibits.

Dr. I. S. Ravdin, professor of surgery at the University of Pennsylvania, will moderate a panel discussion of pre- and post-operative care. Dr. Philip Thorek, associate professor of surgery at the University of Illinois and professor of surgery at Cook County Graduate School will discuss "Intestinal Obstruction." Three other surgeons will highlight advances in vascular, thoracic, and neurosurgery. One afternoon will be devoted to a review of procedures that assure birth of "healthy babies" from "well mothers." This subject is important to family physicians who currently deliver 85 per cent of the nation's children.

The Academy's policy-making Congress of Delegates will convene at 2 p.m., Saturday, March 23. All sessions of the Congress and many social functions will be held in the Sheraton-Jefferson hotel.

Wednesday evening, March 27, following induction ceremonies for Academy President-elect Malcom E. Phelps, El Reno, Oklahoma, more than 3,000 guests will attend a President's reception and dance honoring J. S. DeTar, M.D., Milan, Mich., president of the Academy.

SECTIONAL MEETING ACS

SURGEONS from the western and north-western states and Canada will participate in a three-day Sectional Meeting of the American College of Surgeons in Seattle, Washington, February 28, March 1 and 2, at The Olympic Hotel. Practical surgical problems will be discussed by a group of distinguished surgeon-teachers at this meeting, which is open to all medical representatives.

Dr. Henry H. Harkins, Professor and Executive Officer, Department of Surgery, University of Washington School of Medicine, is Chairman of the local Advisory Committee on Arrangements for this meeting.

The three-day program of concentrated presentations will include panel discussions, symposia, scientific papers, and new surgical motion pictures.

George A. Falkner, Walla, Walla, President of the Washington Chapter of the College, will preside over the Dinner program on the evening

of Wednesday, February 27. Speakers will be F. John Lewis, Minneapolis, on the topic "A Super-Radical Mastectomy for Carcinoma of the Breast" and Paul R. Hawley, The Director, ASC, on "The Position of the College Upon Current Problems of Medical Practice."

The preliminary program includes the following speakers and topics:

Thursday morning, February 28

Cardiac Arrest. K. ALVIN MERENDINO, Seattle.

Priorities for Surgical Treatment in Mass Disasters. COL. JOSEPH R. SHAEFFER.

The Use of Skin Grafts in Treatment of Acute Hand Injuries. MORRIS J. DIRSTINE.

Symposium on Amputations: ERNEST M. BURGESS, Seattle, Leader, DEAN K. CRYSTAL, FAULKNER A. SHORT.

Ophthalmology Symposium — Surgical Pathology of Special Interest to the Ophthalmologist. LEONARD CHRISTENSEN, LEVON K. GARRON, A. RAY IRVINE, JR.

TRAUMA LUNCHEON, 12:30-2 p.m.

Thursday afternoon

DR. BURGESS presiding:

Trauma Symposium. ROBERT A. WISE, FRED J. JARVIS, KENNETH E. LIVINGSTON, ALLEN M. BOYDEN, ROLAND D. PINKHAM, FRANK P. PATTERSON.

DR. HERBERT E. COE, Seattle, presiding:

Symposium on Hypothermia in Cardiac Surgery. J. CARTER CALLAGHAN, FRANK L. GERBODE, F. JOHN LEWIS.

Friday morning

Antibiotics in Surgery. LT. COL. EDWIN J. JULASKI.

Some Observations on the Treatment of Varicose Veins and Stasis Ulcers. G. LESLIE WILLOX.

Indications for Duodenostomy in Common Duct Surgery. HORACE J. McCORKLE.

Significance of Lower Abdominal Pain as a Symptom in Gynecology. ARTHUR B. NASH.

Surgical Stress Response — When is it Normal, and When Should it be Treated? JAMES D. HARDY.

Friday afternoon

2-3:25, RALPH H. LOE, Seattle, presiding:

Cancer Symposium. H. MASON MORFIT, CLARENCE V. HODGES, ORLISS WILDERMUTH, HARVEY W. BAKER.

3:30-5:00 p.m. CHARLES D. KIMBALL, Seattle,

presiding:

Panel — Incontinence in the Female. HOWARD C. STEARNS, ROBERT J. JOHNSON, ROY L. SWANK, TATE MASON, R. PHILIP SMITH.

The Saturday half-day session will feature films and two panel discussions, JOEL W. BAKER, Seattle, presiding:

Panel — Vascular Grafts vs. Endarterectomy. HENRY N. HARKINS, WILEY F. BARKER, EDWIN J. WYLIE, JACK A. CANNON.

Panel — Biliary Tract Surgery. H. ROCKE ROBERTSON, E. A. BOYDEN, CARL P. SCHLICKE, WILLIAM E. HUTCHINSON, JOEL W. BAKER.

Inquiries about Sectional Meetings may be addressed to Dr. H. Prather Saunders, Associate Director, American College of Surgeons, 40 East Erie Street, Chicago 11, Illinois.

International College of Surgeons To Hold Tenth International Congress In Mexico City, February 24-28

THE INTERNATIONAL College of Surgeons extends a cordial invitation to all physicians, medical personnel and their friends to attend its Tenth International Congress in Mexico City, February 24-28.

The meeting is being held at the invitation of His Excellency, Don Adolfo Ruiz Cortines, President of Mexico. It will combine an excellent scientific program by outstanding surgeons of the world with an opportunity to enjoy the show places of Mexico.

Four days will be devoted to the scientific program, to be presented at the University of Mexico. This will cover all phases of surgery. Blocks of rooms have been set aside in Mexico City's finest hotels for those attending. Social functions have been scheduled. For those who wish to see something of the country, two post-congress tours have been arranged.

In view of the large attendance which is expected, and the shortness of time, reservations should be made at once. To simplify the making of arrangements, the International Travel Service, Inc., Palmer House, Chicago 3, Ill., has been chosen to handle registrations for the congress, hotel reservations and travel. Inquiries for further information should be directed to the International Travel Service, Inc.

SYMPOSIUM TO DISCUSS "FATS IN HUMAN NUTRITION"

CHICAGO — "Fats in Human Nutrition" will be discussed in a symposium to be held March 15 in the Louisiana State University auditorium, New Orleans, under the sponsorship of the American Medical Association's Council on Foods and Nutrition.

Cooperating in presenting the symposium will be the Orleans Parish Medical Society, the New Orleans Graduate Medical Assembly, the School of Medicine of Louisiana State University, and the Tulane University School of Nutrition.

Speakers will include outstanding men in nutrition, biochemistry, pediatrics, heart disease, and other allied fields.

Special emphasis will be on fats, cholesterol, and atherosclerosis, according to Dr. Philip L. White, secretary of the Council on Foods and Nutrition. The meeting is especially planned for general practitioners and other physicians, nutritionists, educators, home economists, and others interested in nutrition.

Speakers and their topics will be:

Dr. L. Emmet Holt, Jr., director of the department of pediatrics, New York University School of Medicine, "Dietary fat — its role in nutrition and human requirements."

Dr. Donald S. Frederickson, clinical associate, National Heart Institute, National Institutes of Health, Bethesda, Md., "Biochemical aspects of fat, cholesterol and lipoprotein metabolism of importance in clinical medicine."

Dr. W. Stanley Hartroft, chairman of the department of pathology, Washington University, St. Louis, Mo., "Pathologic lesions related to disturbances of fat and cholesterol metabolism in man."

Ancel B. Keys, Ph.D., director of the laboratory of physical hygiene, University of Minnesota, "Epidemiological studies of diet, blood lipids and atherosclerosis."

Dr. Edward H. Ahrens, Jr., associate physician at the Rockefeller Institute Hospital, New York. "Metabolic studies of relationships between dietary fat and serum lipid levels."

Dr. Frederick J. Stare, head of the department of nutrition, Harvard school of public health, and associates, "Therapeutic implica-

tions of nutritional studies relating to serum lipids and atherosclerosis."

Chairman for the afternoon session on atherosclerosis will be Dr. George E. Burch, professor and head of the department of medicine, Tulane University.

The presentations will be followed by a discussion session among the speakers and physicians and scientists from the New Orleans area. The discussion also will be opened to the audience.

The American Academy of General Practice is offering six hours of credit in category one to members of the Academy who attend the symposium.

Those interested in attending may get further information by writing the Council on Foods and Nutrition, American Medical Association, 535 North Dearborn, Chicago 10, Ill.

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PHOENIX *Clinical* CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL PRESENTATION OF CASE 41291

A SEVENTY-ONE-YEAR-OLD retired accountant entered the hospital complaining of indigestion.

Fifty years before admission while in Puerto Rico the patient had a "tropical complaint" characterized by indigestion and midepigastria distress. Since that time at irregular intervals he had experienced attacks of postprandial epigastric distress. These came on almost immediately after meals, were not related to any particular food, to position or to exertion but did follow excessive eating and drinking of alcohol. Relief was obtained by fasting or dieting or by abstaining from alcohol. There was no associated nausea, vomiting or melena. He never consulted a physician or took medicine. Two or three months before entry the distress became more severe and frequent to the point where it occurred after every meal and sometimes lasted until the next one. It was gnawing in nature, and did not radiate. He was treated by his family physician with a bland diet, belladonna and "white tablets" with only temporary relief. A gastrointestinal series and two barium-enema examinations were said to have been negative. Three stool benzidine tests were positive. His appetite declined markedly, and he became progressively weaker. During the six months before admission he lost 35 pounds. Shortly before admission the pain became unremitting, and partial relief was obtained only by lying down. With the recent increase in pain the patient noted the onset of slight itching of the back, which was not accompanied by jaundice or a rash. It gradually increased in intensity so that it interfered with sleep.

The patient admitted to having consumed as much as 1 pint of whisky a day in the past, but now limited the intake to $\frac{1}{2}$ pint a week.

The temperature was 98.6° F., the pulse 80, and the respirations 18. The blood pressure was 110 systolic, 60 diastolic.

Physical examination revealed a small, alert, cachectic man. The chest was increased in anteroposterior diameter and was hyperresonant; expirations were prolonged. The heart sounds were distant and a Grade 1 apical systolic murmur was heard at the apex. The liver was palpable 3 finger breaths below the right costal margin. Its edge was slightly tender, firm and smooth. The prostate was slightly enlarged and firm. There was phlebitis and edema of the left leg.

Urinalysis was negative. Examination of the blood revealed a hemoglobin of 11.8 gm. per 100 cc. and a white-cell count of 13,100, with 48 per cent neutrophils, 6 per cent lymphocytes, 4 per cent monocytes and 42 per cent eosinophils. The cephalin and the thymol flocculation tests were negative. The alkaline phosphatase was 3.4 units per 100 cc. The bilirubin was less than 0.2 mg., the total protein 4.7 gm., the albumin 2.8 gm., and the globulin 1.9 gm. per 100 cc. A glucose tolerance test showed a fasting blood sugar of 123 gm., a thirty-minute level of 150 mg., a sixty-minute level of 195 mg. and a two-hour level of 162 mg. per 100 cc. A blood Hinton test was negative. An x-ray film of the chest revealed the presence of multiple healed fractures in the posterior rib cage on the left. The lungs were emphysematous and had increased linear markings, especially in the region of the right middle lobe. The heart was not enlarged. A Graham test was negative. A gastrointestinal series demonstrated a normal esophagus, stomach and duodenum. There was no delay in gastric emptying. In films made directly after the barium meal there was some irregularity of the jejunum over a 5-cm. segment just distal to the ligament of Treitz, then an intervening 10-cm. zone of relatively normal-appearing small bowel followed by another segment that was somewhat irregular in outline.

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DR. ROBERT T. PHILLIPS

This 71 year old accountant gives a history dating back 50 years to a tropical complaint acquired in Puerto Rico. This has persisted at irregular intervals, aggravated by alcohol and food, and relieved by abstaining from these.

In the past six months he has lost 35 pounds. He has had abdominal pain of increasing severity, lasting from one meal to the next, is gnawing in character, does not radiate, and is accompanied by slight itching of the back which interferes with sleep.

The abdominal pain may be partially relieved by lying down.

Physical examination revealed a small, alert cachetic man. His chest is emphysematous with increased linear marking — more marked in the right middle lobe.

The liver is enlarged, smooth, firm and a little tender.

The heart has a little murmur.

There is phlebitis and edema of the left leg.

The prostate is slightly enlarged and firm.

The urine is negative.

The blood shows a hemoglobin of 11.8 gms/100 cc. White blood count 13,000, 42% neutro, 42% eosinophiles. Cephalin flocculation and thymol turbidity are negative. Alkaline phosphatase 3.4 units, is normal. Total protein 4.7, albumin 2.8 gms., globulin 1.9 gms. Glucose tolerance test is a little abnormal.

X-rays of chest show healed fractures of the posterior rib cage on the left.

G.I. series show normal stomach, duodenum and two areas of irregularity in the upper jejunum.

The obvious diagnosis at first glance would be a schistosoma masoni infection acquired in Puerto Rico 50 years ago. This would not be the classical picture of cirrhosis, ascites and extreme wasting, but one of those rare instances in which parasite and host live in balance for years, the balance finally tipped by the hosts' advancing years and alcoholic indiscretions. This and other parasitic infections were considered largely because of the marked eosinophilia.

I could be satisfied with none of them.

Echinococcus granulosa infestation doesn't fit in at all even though it could give the eosinophilia.

The weight loss, anemia, epigastric pain par-

tially relieved by lying down, the itching of the back, the melena and the X-ray findings of two areas of irregularity, all suggest a malignancy in the proximal jejunum.

Is the itching the equivalent of the pain found in tumors of the pancreas? However, lacking a palpable tumor, or something other than a slightly abnormal glucose tolerance curve, we can only surmise that this is a possibility.

The previously normal G.I. series and the findings of the irregularities in the upper jejunum at this time, plus the increasing severity of the patient's symptoms suggest the possibility of a tumor of the bowel which has slowly grown to produce symptoms by its local and metastatic growth.

This patient is in the eighth decade, the most vulnerable age for the malignant tumors of the small intestine. While tumors of the jejunum are rare, they do occur.

Adenocarcinoma is the most common tumor in this area. With no note made of mucosal alteration we might consider those whose growth is more slow and extra lumenal. In this group we have leiomyoma, leiomyosarcoma and lymphosarcoma.

Lymphosarcoma tends to infiltrate the outer coats of the bowel before involving the mucosa. At first there is little or no stenosis. Relatively large areas of bowel may be involved. The lumen of the bowel may be increased. The bowel wall may be rigid with no peristalsis.

Relative flexibility of the defect under the fluoroscopist's fingers is in favor of lymphosarcoma. Diagnosis is always made by laparotomy.

The eosinophilia could be due to metastatic involvement of the surface of the peritoneum.

Periarteritis nodosa, tumors of the ovary (not in this man) and parasites will also give eosinophilia.

This patient's anemia is mild as is often the case in lymphosarcoma. Hodgkin's and the adenocarcinoma generally cause a more severe anemia.

As for the phlebitis — this is not uncommon when a malignancy is present.

Chronic ulcerative jejunitis is to be mentioned, especially as a so called skip area may be interpreted from the X-ray report. There is no evidence of stenosis noted. I will surmise that in this case with the long history, some evidence of stenosis should be present.

Eosinophilic granuloma of the bowel is to be mentioned and passed over.

The linear densities noted in the lung are considered rather futilely, I can't fit them into the picture. Like Mr. Truman I will dismiss them as "red herring".

My diagnosis:

1. Malignancy of the proximal jejunum, probably lymphosarcoma or Hodgkin's.
2. Chronic regional jejunitis.
3. Schistosomiasis masoni.

DIFFERENTIAL DIAGNOSIS

Dr. Daniel S. Ellis: This elderly man had gastrointestinal symptoms for fifty years, but in the year before admission he had a definite change in symptoms, with weakness, anorexia, weight loss and a severe, unremitting pain. The only findings on physical examination that may be of importance other than the cachexia are the hyperresonance of the chest and the enlargement of the liver. I am going to say that he had emphysema and that was the only significant disease in the chest unless Dr. Hanelin shows me evidence of other disease in the films. The liver apparently was not very large; in a cachectic man with an emphysematous chest a liver palpable 2 or 3 finger breaths below the right costal margin would not be unusual, and I have no other evidence of its enlargement. There was no mention of nodularity of the liver. I was given three x-ray films of the abdomen with the protocol, and I am not impressed by the enlargement of the liver in these films. Another point in the history, which may be very important, is the pruritus.

The important laboratory findings are the occult blood in the stools, the slight anemia and the marked eosinophilia. The last finding is one on which I have relied heavily in making a diagnosis. From the symptoms and physical finding I believe this patient had a malignant neoplasm of some kind. There was a lesion or multiple lesion in the small bowel; the problem is to determine what kind of neoplasm this man had in the small intestine and whether or not any disease in addition to that was demonstrated on the x-ray films. After looking over the literature last night I find that I am fortunate in having an expert on the roentgenologic diagnosis of diseases of the small bowel in the person of Dr. Hanelin, who will interpret the films for us. Perhaps he can make the

diagnosis for me. Is there anything in the chest, Dr. Hanelin, or can I dismiss that?

Dr. Joseph Hanelin: The lungs are emphysematous, and that is about all we can say. The heart is not enlarged; there may be some fullness of the left ventricle. There are old rib fractures on the left side.

Dr. Ellis: Are those fractures traumatic fractures that have healed?

Dr. Hanelin: Yes; I see no evidence of any pathologic bone involvement of the liver or spleen and think, as he does, that the emphysema probably allowed the liver to be readily palpated. The stomach and duodenum are normal. The abnormalities are in two segments of small intestine — one immediately beyond the ligament of Treitz and another about 10 cm. beyond it of similar length. A complete small-bowel examination was not done. Certainly, the first condition that comes to mind is neoplasm. I think I shall let Dr. Ellis speculate about the type since this is really not an x-ray discussion.

Dr. Ellis: Obviously, the final diagnosis of this lesion can only be made by a biopsy. I have already committed myself by saying that, because of the marked weight loss, progressive weakness, anorexia, anemia and the steady downhill course over the months immediately preceding admission, I think that this was a malignant neoplasm. Before discussing the kind of neoplasm, however, I think I should mention other possibilities.

There are several "red herrings" in the protocol. In the first place I am shifted off on a tangent by the intimation that the patient had lived in the tropics and that he had eosinophilia; immediately, the question comes up: Was there parasitic involvement? I am not familiar with any parasitic disease that might give this x-ray picture. I do not think hookworm will do it. Nor do I think schistosomiasis will, but I have not seen enough x-ray films of schistosomiasis to know. Judging by what I have read I should consider that there are gastrointestinal lesions of eosinophilic granuloma. I do not think I should do any more than mention it. Amebiasis may rarely be associated with eosinophilia. Amebiasis, when it involves the gastrointestinal tract, is most commonly localized in the cecal region. I am not aware of the possibility of amebic granulomas high in the small bowel. The other granulomatous diseases like regional enteritis and tuberculosis should be mentioned.

It would be most unusual for a tuberculous lesion in the jejunum to look like this. The lesions of regional enteritis seem to me to be slightly different. Perhaps Dr. Hanelin would be willing to tell us why he thinks this may not have been regional enteritis.

Dr. Hanelin: This does not look like any regional enteritis that I have ever seen. It is unusual, of course, to see regional enteritis in this location, although rarely it may involve the uppermost portion of the gastrointestinal tract.

Dr. Ellis: Regional enteritis has involved the duodenum and jejunum, but I think the configuration here is not that of regional enteritis.

Dr. Hanelin: I should expect to see narrowing of the bowel and frank evidence of ulceration but not quite so much irregularity.

Dr. Ellis: Also, there was no history of the patient's having had a great deal of diarrhea; I think he would have had some diarrhea with regional enteritis of a severity that made him so ill. These are the possibilities besides neoplasm that I should consider, but I believe that neoplasm is more likely.

What kind of neoplasm was this? Five per cent of all gastrointestinal malignant neoplasms are located in the small bowel. Botsford and Sibel, several years ago, reported 65 cases of small-bowel tumor, of which 33 were malignant; of those 33, 18 were adenocarcinomas, 13 were lymphosarcomas, and 2 were argentaffinomas. I think everyone will concede that carcinoma is more likely in this area than any other type of neoplasm, although it may be only slightly more common than lymphoma. Now I shall go back to two findings that I mentioned previously — namely, the eosinophilia and the generalized pruritus, both of which are common in lymphomatous disease. Eosinophilia is also seen with hepatic neoplasms. The liver-function tests were negative, there was no evidence that the liver was enlarged, and it was certainly not nodular, so that I shall dismiss metastatic neoplasm to the liver as the cause of the eosinophilia. That leaves lymphoma, and by and large it lies in the realm of the pathologist to tell us which kind was present. There are, however, some clues that point to one kind of lymphoma rather than the other. The generalized itching and the eosinophilia, I am told, are seen more often with Hodgkin's lymphoma than with the other types so I might narrow this even further.

Jackson and Parker state that Hodgkin's paraganuloma never occurs in the gastrointestinal tract. Hodgkin's granuloma probably is the most common type of lymphoma. I should be inclined to believe that this was probably the type in this case but for the fact that there were multiple lesions. In the series of disease in the small bowel reported by Jackson and Parker there were no cases of Hodgkin's granuloma manifesting themselves as multiple lesions; they are usually single lesions in the gastrointestinal tract from disease elsewhere. Hodgkin's sarcoma, on the other hand, as frequently as not, produces multiple lesions in the gastrointestinal tract. Therefore, I am going to say that this patient had a malignant lymphoma of the jejunum and that since there were multiple lesions he most probably had Hodgkin's sarcoma rather than Hodgkin's granuloma.

I should mention one other possibility because of the multiple lesions — that is, carcinoid. That is more likely to be found in the region of the cecum and small bowel; however, it is found in the upper small intestine occasionally.

Dr. William H. Baker: I thought that eosinophilia was not usually associated with amebiasis; I thought that was one major distinguishing feature.

Dr. Ellis: It is much less likely than with the other parasites.

CLINICAL DIAGNOSIS

Metastatic malignant process of small bowel.

DR. DANIEL S. ELLIS'S DIAGNOSIS

Hodgkin's sarcoma of small bowel.

ANATOMICAL DIAGNOSIS

Malignant lymphoma reticulum-cell-sarcoma type, of small bowel.

PATHOLOGICAL DISCUSSION

Dr. Austin L. Vickery; Dr. McDermott, would you outline the operation that you performed on this man?

Dr. William V. McDermott: When we opened the peritoneal cavity we saw a series of tumor masses beginning at the ligament of Treitz and involving most of the small bowel through its entire extent. There must have been at least a dozen lesions of varying sizes up and down the small bowel. The mesentery contained many large lymph nodes, including a mass of lymph nodes around the superior mesenteric vessels. We believed that the primary tumor was a lymphoma; it had a typical rubbery consistence.



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None of the tumor extended through the serosa at the time of operation. We debated how best to determine the diagnosis. Finally, we selected a large lymph node, which we thought the pathologist would tell us had the characteristic picture of lymphoma. No surgical resection was possible.

Dr. Vickery: The lymph-node biopsy obtained at the time of exploration showed only chronic lymphadenitis on microscopical examination. The node was large and suggestive of lymphoma on cut surface, but when the gastrointestinal tract is involved with malignant lymphoma, biopsy of enlarged mesenteric lymph nodes has often proved to be a diagnostic trap. This patient was referred to Dr. Milford D. Schultz for x-ray treatment. I think it is interesting that in the record Dr. Schultz has dictated a note to the effect that he gave a good deal of weight to the two observations that Dr. Ellis mentioned — the itching of the skin and the eosinophilia — as favoring the diagnosis of lymphoma.

After a postoperative course of x-ray therapy the patient was fairly well for a while and then proceeded to go rapidly downhill and died six weeks after laparotomy.

Post-mortem examination showed multicentric intestinal tumor masses, rubbery in consistence, irregular in outline and intramural in location extending from the ligament of Treitz down the jejunum for a distance of 80 cm. There was a generalized peritonitis, and the peritoneal cavity contained a liter of purulent fluid. The opened bowel revealed focal mucosal ulcerations corresponding to zones of tumor infiltration and necrosis. One of these ulcerated areas had perforated through the bowel wall, producing the peritonitis.

On microscopical examination these tumor masses proved to be malignant lymphoma. The pleomorphism and cytology of the neoplasm suggested a classification in the reticulum-cell-sarcoma group.

We wondered if the x-ray therapy and the resultant tumor reaction were not responsible for the extensive necrosis in the tumor; this has been described in the radiology literature. Seventy-nine cases of primary malignant lymphoma of the gastrointestinal tract were reported last year by Allen et al. from the files of this hospital covering a forty-year period. Twenty-five of these occurred in the small bowel. The authors pointed out the high relative

incidence of malignant lymphoma to all forms of malignant small-bowel neoplasms, lymphomas comprising about 40 per cent of the total. This figure is in striking contrast to other portions of the gastrointestinal tract.

It is worth while pointing out that, although very frequently the regional lymph nodes are enlarged with primary lymphoma of the gastrointestinal tract, they are not necessarily involved by the tumor. Approximately half the cases of malignant lymphoma of the small bowel in this series that had resections did not show lymph-node involvement. The warning and, of course, the lesson to be learned is that the primary lesion, not the lymph node, should be biopsied. Multicentric tumors are not uncommon in lymphoma of the small bowel and made up about 25 per cent in this series of cases; these cases proved to have a prognosis about 50 per cent worse than those with single lesions. Fifteen patients with small-bowel lymphoma had resections; 5 of these had a five-year survival. The majority of the patients died within a year, so that the prognosis in general is not good, but it is better than that for carcinoma of the small bowel.

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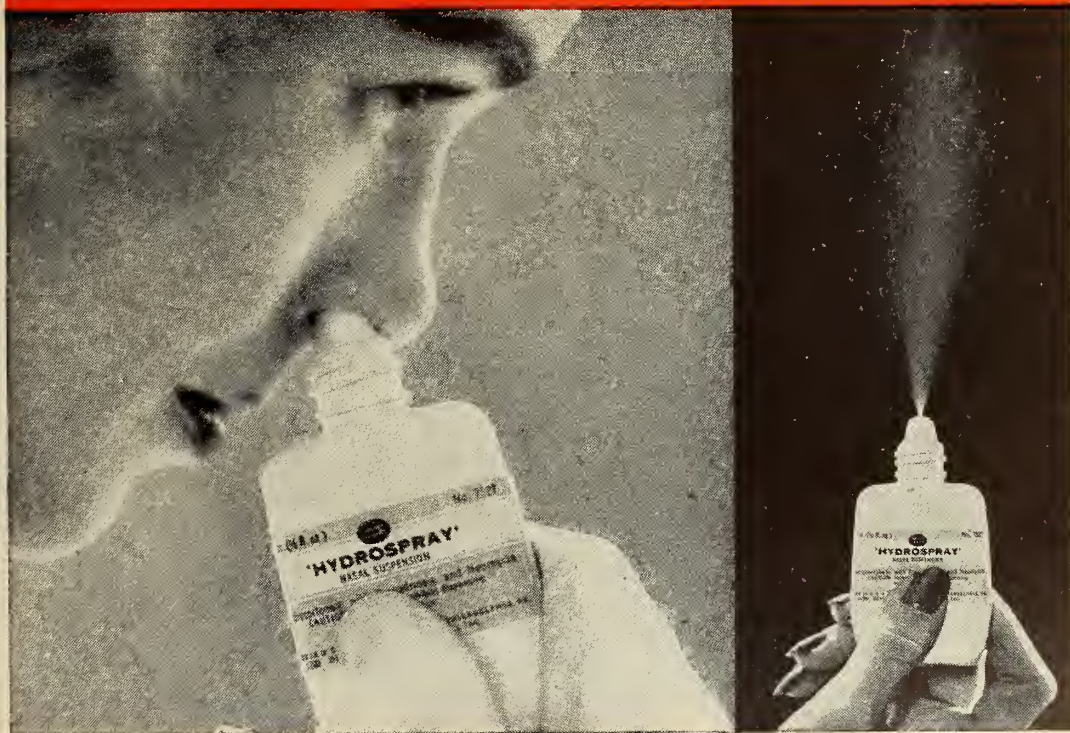
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THIRTEENTH ANNUAL CONFERENCE

THE THIRTEENTH Annual Conference for State Presidents and Presidents-elect was held at the Drake Hotel in Chicago, October 1, 2 and 3, 1956, there were 153 registered including 43 State Presidents and 43 Presidents-elect. The Arizona Auxiliary was represented by Mrs. Oscar Thoeny, State President and I as President-elect.

Mrs. Robert Flanders, National President and Mrs. Paul Craig, President-elect presided over the conference. Mrs. Flanders spoke on the theme for the Auxiliary this year, (Health is our greatest Heritage). The primary project for the auxiliary this year is health education. Through our programs and projects we must endeavor to aid our own community to preserve this heritage, without good health personal happiness is not possible.

Dr. Ernest Howard, Assistant Secretary to the American Medical Association, gave a round-up of the A.M.A. activities for the past year. Dr. Howard urged that all auxiliaries work closely with their local medical societies. He discussed a few of the bills passed and ones pending before Congress.

HR 7225 has been adopted and the cruel blow was that it was passed by one vote. This is another step toward socialized medicine. Dr. Howard said the Hoover Commission had many good features but with the medical recommendations as they were the A.M.A. could not endorse it. The objectionable parts could not be eliminated.

THE AMERICAN MEDICAL EDUCATION FOUNDATION

Mr. John Hedback, Executive Secretary of A.M.E.F. stated the Woman's Auxiliary had done more than any other group this year to raise money for the A.M.E.F. They raised \$106,000 and this year the quota of the Woman's Auxiliary is \$140,000. An easy way for each one of us to raise our share is the use of the new "In Memoriam" cards and the "In Appreciation" cards. The board of directors of A.M.E.F. will not have a fund raising campaign this year.

SAFETY

This year we have a new special safety committee. Safety in traffic and safety in the home. The National chairman whose slogan is, 'Heed' not 'Speed', is accenting safety consciousness, observance of traffic signals, driver training programs and the use of safety devices in automobiles. The baby sitter program called "Gems" (Good Emergency Mother Substitutes) is being stressed.

RECRUITMENT

This no longer applies to just nurse recruitment but it is an educational program to stimulate and inform the nation's youth of other fields allied to medicine such as medical technology, medical social service, physical and occupational therapy, there are 150 different varieties of health careers. Last year 46,000 students were admitted to Professional schools of nursing and 15,000 to practical nursing schools. As an auxiliary we can check the needs in our own communities and see that the high school students are provided with the necessary information and guidance with special emphasis on good programs.

MENTAL HEALTH

Mental illness is one of our major health problems. Special emphasis is being placed on psychiatric problems in children. Each year \$700,000,000 is spent on mental health illnesses and the need for child guidance centers and marriage counsellors is very evident. There is need for parents to be educated to the emotional disturbances that some children encounter in the process of growing up. Films for TV and radio transcriptions are available.

CIVIL DEFENSE

This continues in importance. We must be prepared for all kinds of disaster such as hospital units set up, training dentists, nurses and lay groups to care for casualties, have first aid supplies in our homes and car.

ORGANIZATION

This committee plans a bell ringing campaign that every eligible Doctor's wife be contacted and invited to join the Woman's Auxiliary. Their aim is to have a membership comparable to the parent body.

PROGRAM

Plan your program to the needs of your own community. A strong interesting program builds a strong enthusiastic auxiliary.

PUBLIC RELATIONS

Our activities in the community create public relations, true happiness comes from helping others.

LEGISLATION

Mrs. Oscar Thoeny participated on this panel speaking on the Omnibus Health Bill and Federal Mortgage.

Mr. Joseph Stetler, Director of the A.M.A. law department, said there had been more bills pertaining to health introduced in the 84th Congress than ever before in history. This again points to the Federal Government's increased intervention in health fields. Mr. Stetler stated that as auxiliary members we should be alert to the bills coming before Congress and know what they are about, check on our husbands and see that they are interested. He predicted the 85th and 86th Congress would be a repetition of the 84th and there is a need for the Doctors to wake up and realize what is happening.

TODAYS HEALTH MAGAZINE

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BULLETIN

This is the working tool and directory for auxiliary members. It serves as an incentive to interest women in unorganized counties. The chairman of the Western region for this publication is Mrs. Roy Hewitt of Tucson, past State President.

HISTORY

This is collecting and filing completed material. Mrs. Jesse D. Hammer of Phoenix did this work alone for many years but with the growth of the National Organization this year there is a committee of four and Mrs. Hamer

is chairman of the Western region.

It was our privilege the last day of the Conference to visit the A.M.A. headquarters. This was informative and interesting to see and hear of the many services available to our Doctors.

The Conference from beginning to the end was both stimulating and educational. I appreciate the privilege of attending this session.

Mrs. Charles S. Powell
State President-elect

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EXTENSIVELY CONFIRMED BACTERIAL RESISTANCE IS SELDOM ENCOUNTERED CHLOROMYCETIN

COMBATS MOST CLINICALLY SIGNIFICANT PATHOGENS

OUTSTANDING EFFICACY OVER THE YEARS

Extensive clinical evidence¹⁻²¹ reflects the antimicrobial efficacy of CHLOROMYCETIN (chloramphenicol, Parke-Davis) against a wide variety of pathogens, including those that are resistant to other antibiotic agents. In fact, recent reports^{1,8,21} indicate that even after prolonged exposure to CHLOROMYCETIN, resistance seldom develops in strains of staphylococci and of other pathogens sensitive to the antibiotic.

CHLOROMYCETIN is a potent therapeutic agent and, because certain blood dyscrasias have been associated with its administration, it should not be used indiscriminately or for minor infections. Furthermore, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

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Thrombophlebitis of the Deep Veins of the Legs

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THERE IS no more dramatic nor discouraging event in the practice of medicine than the sudden clutching of the chest, the cry of pain, the dyspnea, the cyanosis and unconsciousness, and death of the patient who suffers a pulmonary embolus originating from a thrombus in the deep veins of the leg. The surgeon who neatly and successfully performs a difficult procedure, or the internist who successfully solves a complex medical problem may suddenly find his patient dead of a complication which, as the knowledge of medical science advances, may be prevented in its entirety.

At the present time there is widespread interest in this country and abroad in the prevention and treatment of deep vein thrombosis but there is considerable confusion regarding the proper and expedient methods of diagnosis and treatment. It, therefore, would seem of value to review some of the work that has been done with the possibility that we will be able to glean from the maze of facts and figures some practical method of treating this unfortunate disease.

DEFINITION

Thrombophlebitis may be defined as "a partial or complete occlusion of a vein by a thrombus with antecedent or secondary inflammatory reaction in the wall of the vein." (1) Terminology has been confusing because of the interjection of the term phlebothrombosis by Ochsner & DeBakey. (2) This may be somewhat helpful from the standpoint of pathogenesis, but clinically and pathologically this distinction is difficult to accept. If a clot develops in a

vein without previous inflammatory changes the presence of the clot itself will sufficiently irritate the vessel wall to promptly produce a phlebitis. Further, a thrombus may suddenly propagate into a non-inflamed segment of a vein from an inflamed and thrombosed segment, thus producing both thrombophlebitis and phlebothrombosis in the same vessel. Confusion is thus compounded, and I agree with Allen, Barker and Hines (1) and with Wright (3) that these are best grouped as all "thrombophlebitis."

ETIOLOGY AND CLASSIFICATION

Thrombophlebitis is a disease result of many different causes and is variable in its course, prognosis and treatment. Table I is a classification given by the American Heart Association, Committee on Nomenclature of the Section for the Study of the Peripheral Circulation:

There are several factors in the development of thrombophlebitis:

- (1) Damage to the intima by chemical, traumatic or dehydrating forces;
- (2) Stasis produced by mechanical blockage such as pregnancy, circulatory failure, garters, girdles, etc., or varicosities;
- (3) Organisms of an unknown or variable type that invade the thrombus through the blood or lymph streams;
- (4) Changes in the clotting mechanisms of the blood.

In 1731 Petit was the first physician to describe the formation of thrombi in the blood vessels. Hunter in 1784 described inflammation of the wall of the vessels as a cause of thrombosis and Virchow in 1846 emphasized mechanical

factors as a cause of thrombosis. Aschoff in 1925 correlated the speed of blood flow with thrombosis and determined that the sluggish blood flow caused agglutination of the thrombocytes (viz. modern concepts of "sludging").(4) From that time to the present numerous investigators have pointed out a variety of etiologies from the "shelter foot" of the British who slept in chairs in the underground during the bombings of London in World War II to the relatively recent paradox of thrombotic thrombocytopenic purpura.

The importance of thrombophlebitis as a possible sign of malignancy was known approximately 100 years ago when Trousseau(9) first noted the association. Usually pancreatic carcinoma is responsible, though many other malignancies share this characteristic. The mechanism is unknown. Wright(10) has pointed out that this form of thrombophlebitis is often resistant to or "breaks through" anticoagulant therapy.

Cryoglobulinemia, cold agglutinins, familial thrombosing tendencies, are examples of clotting defects in the blood that may lead to thrombophlebitis.

The converse — that is, phlebitis first and thrombosis second — with no obvious origin in a male who uses tobacco should arouse the suspicion of Buerger's disease. In many cases attacks of phlebitis will precede by several months or years arterial inflammation and occlusion.

A search for an "X factor" led to some interesting but unconfirmed work by Vogelsang & Shute of Canada,(5) and Ochsner of New Orleans(6) on antithrombin — thought to be Vitamin E. The possible role of chymotrypsin released by pancreatic tumors as a thrombotic "X factor" led to, at present unsubstantiated, claims by Innerfield that these proteolytic enzymes are both thrombolytic and anti-inflammatory.(7) Plasminogen activated by a proteolytic enzyme recently has been thought to be thrombolytic but at this writing there is no method of dissolving blood clots.

In any event, thrombophlebitis appears to arise from numerous etiologic or precipitating factors — indeed a "many headed hydra".(3)

INCIDENCE

Many investigators the world over have laboriously and patiently counted and reported

the frequency of thrombophlebitis. Zilliacus(4) in scholarly fashion summarized these figures as on Table II.

One notes the "% thrombosis" fell from 1.68% before 1940 to 0.59% after 1940. The one important variable was early ambulation. However, of those who developed thrombophlebitis the incidence of fatal pulmonary emboli was increased by about one-third.

The frequency of pulmonary embolism after thrombosis following surgical operations is 50-60%. In obstetric cases the frequency is less, 15-35%.

In surgical series the mortality in cases with thrombosis is almost 20%, while in obstetric cases it is only 3-5% — a curious and unexplained difference.

Singer, in Leipzig, in 1929, pointed out that medical cases have an almost identical frequency of thrombosis and embolism as do surgical cases. Recently, writing in the J.A.M.A., Dr. Paul D. White, of Boston, U.S.A.(8) also concluded that thromboembolism is as frequent a medical as it is a surgical catastrophe.

DIAGNOSIS

The swollen, warm, edematous, painful leg, accompanied by fever, tachycardia and a palpably thrombosed vein is a clinical entity well known to all practicing physicians.

However, many victims of thrombophlebitis fail to present "calor, rubor, dolor", but rather offer subtle and often deceptive signs and symptoms.

One of the earliest signs of thrombophlebitis is an unaccountable subnormal temperature after a surgical operation or a delivery (Michaelis' sign, 1911). Mahler, 1895, observed that a tachycardia under similar circumstances is still an earlier sign of thrombosis. Other early symptoms of thrombosis are restlessness, anorexia and insomnia; an unreasonable fear of impending death should immediately suggest thrombosis.

Examination of the thrombosed extremity may reveal little. Dorsiflexion of the foot may produce a feeling of tautness in the calf of the leg (Homan's sign). Calf tenderness, both subjective and on palpation, increased consistency of the calf or of the muscles of the adductor region, incipient edema, at first generally above the ankle, later on the lower part of the leg, may be found.

Table I
DISEASES OF VEINS
Organic (Structural)

- A. Obstructive
 - 1. Thrombophlebitis and venous thrombosis (phlebothrombosis)
 - a) Primary
 - (1) Thromboangiitis obliterans
 - (2) Recurrent or migrating (without arterial lesions)
 - (3) Essential
 - b) Secondary to
 - (1) Mechanical injury (contusion, laceration, surgery)
 - (2) Muscular effort or strain
 - (3) Chemical injury (sclerosing agents, drugs, solutions for diagnosis)
 - (4) Inflammatory or suppurative lesions — infectious diseases
 - (a) Tuberculosis, syphilis, actinomycosis
 - (b) Other bacteria (to be specified)
 - (5) Severe ischemia
 - (6) Chronic disease of vein wall (varices, phleboscлерosis)
(Late complications — varicose or post phlebotic ulcers)
 - (7) Blood dyscrasias (polycythemia vera, leukemia, pernicious anemia)
 - (8) Epidermophytosis (?)
 - 2. Neoplastic invasion of vein
 - 3. Venous compression — with or without thrombosis or thrombophlebitis due to
 - a) Gravid uterus
 - b) Neoplasm
 - c) Aneurysm
 - d) Scar tissue
 - e) Scalenus syndrome
 - f) Fractures and dislocations
 - g) Increased intra-abdominal pressure (ascites, etc.)
 - h) Extrinsic pressure (tight girdles, circular garters, poorly made trusses, etc.)
- B. Nonobstructive
 - 1. Varicose veins (aneurysm)
 - a) Primary — congenital incompetent valves
 - b) Secondary (to proximal obstructive lesions or pressure)
 - c) Secondary to phlebotic destruction of valves
 - d) Compensatory dilatation of collateral veins
 - 2. Arteriovenous fistula
 - a) Congenital
 - b) Traumatic
 - c) Mycotic
 - d) Secondary to local disease
 - 3. Aberrant position
 - 4. Hypoplasia
 - 5. Phlebectasia
 - 6. Periphlebitis without thrombosis
 - 7. Phleboscлерosis (not usually obstructive)
 - 8. Rupture

Table II

| Author | Year | Surg. Cases | Thromb. Cases | % Thromb. | % Emb. | % Fatal Emb. of Thromb. |
|------------------|-------|----------------|------------------|-----------|--------|----------------------------|
| Ranzi | 01-34 | 47,120 | 595 | 1.26 | 0.72 | 20 |
| Huber | 25-31 | 12,222 | 126 | 1.0 | 0.56 | 11 |
| Barker | 27-40 | 158,200 | 1,665 | 0.95 | 0.57 | 20.6 |
| Dahl | 11-30 | 18,168 | 636 | 3.50 | 2.33 | 14.9 |
| Averages | | 235,710 | 3,022 | 1.68% | 1.04% | 16.6% |

These figures extend up to 1940. After 1940 early ambulation became accepted practice and statistical analysis reveals some important differences. See Table III.

Table III

| Author | Year | Surg. Cases | Thromb. Cases | % Thromb. | % Emb. | % Fatal Emb. of Thromb. |
|-------------------|-------|----------------|------------------|-----------|--------|----------------------------|
| Zilliacus | 40-45 | 126,524 | 646 | 0.51 | 0.105 | 20.4 |
| Dahl | 42-44 | 1,736 | 10 | 0.58 | 0.67 | — |
| Eckblom | 40-44 | 19,000 | 143 | 0.75 | 0.25 | 21 |
| Johanson | 33-44 | 45,376 | 246 | 0.54 | 0.7 | 34 |
| Westerborn . . | 31-44 | 43,737 | 254 | 0.56 | 0.4 | 22 |
| Averages | | 236,373 | 1,299 | 0.59% | 0.425% | 26.8% |

Increased temperature of the skin of the involved extremity when compared to the opposite member may be noted; conversely, a reflex dystrophic coldness and sweating may be present.

Increased sensitivity to palpation along the course of the deep veins may be present and a discoloration, varying from red to blue, or bluish-white, or even marbelization (*cutis marmorata*) can occur.

As a further aid in making the diagnosis it may be noted that deep thrombosis is more common in the left leg. The ratio of left-sided thrombosis to right-sided thrombosis is about 3:1.(4)

SIGNS AND SYMPTOMS OF PULMONARY EMBOLISM

The sudden deaths that occur due to massive pulmonary embolism after the post-operative or post-partum patient first gets out of bed are unfortunately too well known.

The embolism comes like a flash of lightning. The patient suddenly becomes pale, cyanotic, extremely dyspneic; chest pain, usually on the right side, unconsciousness and death follow in rapid order. At post mortem a clot filling the entire trunk of the pulmonary artery is found. Death is almost instantaneous in these cases.

The symptoms of a pulmonary embolism are almost wholly dependent upon the size of the embolus. With a more modest embolus the patient's symptoms are less severe. Temperature, hemoptysis, tachycardia, hypotension, "pleurisy" usually follow the non-fatal insult. In the mildest cases the patient may only complain of a "stitch in the side." A slight increase in the pulse rate, a low grade fever, and bloody sputum may be the only manifestations of a pulmonary embolism.

Roentgenographic studies may show a wedge-shaped shadow of increased density spreading outward from the hilum; a pleural reaction with thickening and even pleural effusion are sometimes found.

The electrocardiogram may reveal the picture of "right heart strain;" the magnitude of the variations dependent upon the size of the infarct. A deep S₁, a tall R₃, S-T elevations, especially over the right ventricles in the precordial leads, are often noted.

The white count is usually elevated to from 12,000 to 20,000 and there is an accompanying polymorphonuclear leucocytosis with the appearance of immature forms. The erythrocyte sedimentation rate is usually normal initially but rises appreciably within 72 hours.

DIFFERENTIAL DIAGNOSIS OF THROMBOPHLEBITIS

Traumatic myositis of the heads of the gastrocnemius muscle may present symptoms and signs at first suggestive of thrombophlebitis. On careful examination, however, one can usually localize the tenderness and induration to the gastrocnemius head and the absence of the "associated signs" of edema, heat, etc., will usually confirm the diagnosis. Homan's sign, will, however, usually be positive.

Cellulitis of the leg may offer a differential diagnostic problem; usually on palpation, however, one notes diffuse tenderness rather than tenderness confined to the anatomical course of the deep veins.

Panniculitis "fat legs" (lipedema), and "chronic foot strain" must be considered in the differential diagnosis. Palpation will reveal the tenderness is "spotty" and follows no venous anatomical patterns and lumpy fatty tissue is easily identified. These conditions are usually bilateral.

TREATMENT

The objectives of successful treatment are:

- (1) Prevention of deep vein thrombosis.
- (2) Prevention of the propagation of an already existing thrombus.
- (3) Prevention of the delivery of emboli.
- (4) Encouragement of the dissolution of the original thrombus.
- (5) Aids to an embarrassed venous return with its sequelae of edema, varicosities, ulcers, etc. i.e. the post-phlebitic syndrome.

PREVENTION OF THROMBOPHLEBITIS

We have seen previously that the incidence of thrombophlebitis fell by greater than 50% in 1940. This dramatic decrease in the frequency of thrombophlebitis is due solely to early ambulation(19) instituted at that time by surgeons all over the world. Unfortunately their medical brethren have not followed suit. Most medical patients are confined to bed for an unnecessary length of time and their incidence of "thrombosed patients" remains at the pre-1940 level.(4)

Besides early ambulation, the use of pedals, frequent turning in bed, and elastic wrappings have all contributed to the lessened frequency of the disease.

Garters, girdles, lounging chairs with hard fronts to the seats produce stasis in the veins by pressure over vulnerable points; their avoidance will help prevent thrombophlebitis.

Dessicated thyroid extract has been recommended as a means of "speeding up" the circulation in the extremities and by reducing stasis thrombophlebitis is thought to be prevented.(11)

Prophylactic anticoagulant therapy has been used successfully in surgical patients to prevent thrombophlebitis. The day before surgery a coumarin is given orally. Its maximum effect occurs after the operation at the time it is most needed. Large numbers of surgical patients have been treated in this fashion with an almost total absence of post-operative thrombophlebitis.(12)

PREVENTION OF THE PROPAGATION OF AN ALREADY EXISTING THROMBUS

Anticoagulant therapy will prevent an existent thrombus from propagating. The "old thrombus" becomes harder — loses its friability — and becomes "stuck" to the wall of the vein by virtue

of the phlebitis its presence creates. Unless a new soft easily fractured thrombus forms the danger of pulmonary embolism passes. Pathological studies(1) have revealed that pulmonary emboli are "fresh" or new clots probably less than 24 hours of age.

The adequate administration of heparin(1)(4)(13)(14)(15)(16)(17) or dicumarol(1)(3)(10)(16)(17)(18) will usually prevent venous thrombosis or extension of an already existing thrombus. Allen Barker & Hines, of the Mayo Clinic, state, "In our experience in more than 1000 cases, dicumarol has been effective in preventing thrombosis in veins, extension of existing thrombosis and pulmonary embolism."(1)

In the author's experience with over 200 patients with thrombophlebitis treated with anticoagulants, none had either extension of the thrombus nor a pulmonary embolus. Of 16 patients with thrombophlebitis who had already suffered a non-fatal pulmonary embolus, no patient had another pulmonary embolus nor extension of the original thrombophlebitis.(17)

METHODS

The desired immediate anticoagulant effect is achieved by the intravenous administration of Heparin Sodium; the initial dose is 50 mgm. given slowly intravenously. In three hours a Lee White coagulation time is done, and on the fourth hour heparin is again administered intravenously. The dosage schedule, followed around the clock, is as follows:

| Lee White Coag. Time | Heparin |
|------------------------|---------|
| Less than 20 min. | 75 mgm. |
| 20-30 min. | 50 mgm. |
| 30-45 min. | 25 mgm. |
| Above 45 min. | 0 mgm. |

The difference in patient response is not determined by a "heparin tolerance test". Heparin in Pitkin's menstruum, or other forms of repository heparin, with or without a vasoconstrictor, are not recommended. The evidence of Barker and his associates and others(16) indicates that absorption of these preparations is too variable to insure either an effective or safe therapeutic level. There are no well controlled studies reported to date indicating the value or safety of intramuscular heparin in a retarding menstruum.

The thermo-lability of heparin and the vari-

able patient tolerances necessitates the continued use of the Lee White test. It has been found that different batches or lot numbers of heparin vary in their effect on the same patient, possibly because of exposure to high temperatures in transit — an important factor in the Southwest.

It has been helpful to both patient and technician to insert a child's spinal needle or a polyethylene tube in a mid-forearm vein to facilitate the administration of heparin and the withdrawal of blood for coagulation tests.

A number of "coumarin" drugs are available — each supposedly with its special advantage, shorter action, more constant absorption, etc. The author has had the widest experience with Dicumarol® (2-4d bis-hydroxy-coumarin).

An initial dose of 300 mgm. of Dicumarol is given by mouth concurrently with the first dose of heparin and 24 hours later a 200 mgm. dose is administered. Lesser amounts are used in patients in whom caution is felt to be necessary (see Table V). The prothrombin time is determined daily by the Link-Shapiro modification of the Quick method(20) and the value desired is two to two and one-half times the control. Experience has confirmed the necessity of drawing blood for the prothrombin time just prior to the next due dose of heparin, for heparin will influence the prothrombin time.(16)(21) Heparin is discontinued when the prothrombin time reaches an adequate therapeutic level and the patient is then maintained on dicumarol.

Anticoagulant therapy is usually continued for one week, during which time the original thrombus becomes well fixed to the wall of the vein and no new thrombus forms. Therapy is not abruptly discontinued, but gradually tapered off over the following week without the necessity of prothrombin times.

Contra-indications for the use of anticoagulants are listed in Table IV and the conditions in which anticoagulants must be used with caution are listed in Table V.

LIGATION

Ligation of the deep veins of the legs is the second treatment of choice — whenever anticoagulants cannot be administered. Numerous difficulties are encountered and not entirely satisfactory results are achieved. Many patients have bilateral thrombosis and require bilateral

ligations. Thrombosis above the point of ligature is an unfortunate complication and chronic venous insufficiency of the legs with edema and stasis ulcers a frequent and unhappy sequelae. Nevertheless, when anticoagulant therapy is contraindicated or circumstances do not permit its use, ligation is a mandatory and usually effective procedure.

OTHER MEASURES

Other measures found to be helpful adjuncts are elevation of the foot of the bed on six inch "shock blocks", and the application of continuous hot wet packs. Elevating the foot of the bed aids venous return in an embarrassed extremity by employing the force of gravity. Simple elevation on pillows has been found to be unsatisfactory because invariably the pillow slips up to beneath the knee and then the foot is below the knee and the desired effect is lost. Further, keeping the leg fully extended with the foot held upon pillows will produce in a short time pain in the back of the knee by straining the hamstrings. With the foot of the bed elevated the patient can move from side to side, or even be prone, and the foot will always be higher than the knee, the knee higher than the groin, etc.

The application of continuous hot wet packs causes peripheral arterial dilatation, relieves pain, and in the author's experience, relieves any reflex peripheral arteriolar vasospasm. In over 200 cases none has required paravertebral block — a procedure recommended by Ochsner(2) and contraindicated in the presence of anticoagulants.

ANTIBIOTICS

Antibiotics are not used unless there is reason to believe the patient has a complicating infection — cellulitis or abscess or infected hematoma. It must be recalled that most antibiotics enhance slightly the anticoagulant effects of heparin and dicumarol.(16)

When the time comes to mobilize the patient, it is usually helpful to fit an elastic stocking which comes to just below the knee. Instruct the patient to avoid passive dependency, pressure behind the knee or in the groin, and to continue to sleep with the foot of the bed elevated until all evidence of dependent edema disappears.

TREATMENT OF A PULMONARY EMBOLIZATION

Once an embolus to the lung has occurred prompt treatment should be instituted. The cyanosis, right heart failure, and death are due to the occlusion of a pulmonary artery by the embolus, together with the reflex pulmonary arteriolar vasospasm throughout the lungs. Emergency treatment consists of papaverine hydrochloride, gr iii. intravenously to relax the pulmonary arteriolar vasospasm and pulmonary hypertension, heparin sodium, 50 mgm, intravenously to prevent further embolization or propagation of the embolus, and oxygen to relieve the anoxia. Digitalis may be helpful in aiding the badly strained right heart. Continuation of these measures, together with antibiotic prophylaxis is the logical sequence of events.

With this method of therapy there were no deaths in 101 patients with massive pulmonary emboli, reported by Zilliacus.(4)

Nevertheless, the best treatment of a pulmonary embolus is its prevention — no longer a nebulous wish but a reality available to all physicians who are willing to take the time and trouble to do so.

SUMMARY AND CONCLUSIONS

1. Deep vein thrombosis of the lower extremities is a serious and sometimes fatal disease of multiple etiologies.
2. Early ambulation, pedals and other preventative measures have decreased the incidence of thrombophlebitis by approximately 50%.
3. The treatment of choice consists of the use of the anticoagulants, Heparin and the coumarin drugs.
4. Prompt treatment with papaverine, heparin and oxygen will prevent death from a massive pulmonary embolus in almost all cases.
5. There is to date no effective method of dissolving blood clots.
6. The best treatment is prevention.

Table IV

CONTRAINDICATIONS FOR THE USE OF ANTICOAGULANTS

1. Duodenal or gastric ulcer
2. Gastric or colon carcinoma
3. Subacute Bacterial Endocarditis
4. Severe Hypertensive Disease

5. Cirrhosis of the liver
6. Hepatitis
7. Dissecting aneurysm of the Aorta
8. Preceding a traumatic operation, such as transurethral resection
9. Severe Vitamin C deficiency (Scurvy)
10. Blood dyscrasias interfering with blood clotting
11. Late pregnancy

Table V

CONDITIONS REQUIRING CAUTION IN THE USE OF ANTICOAGULANTS

1. Hypoprothrombinemia
2. Acute or Chronic Passive Congestion of the Liver (Heart Failure)
3. Thrombotic thrombocytopenic purpura.
4. Non-traumatic Surgery
5. Renal insufficiency

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Treatment of Envenomization by Animals in Arizona

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ONE OF THE problems of discussing venomous animals revolves about what constitutes venom. Certainly the bite of a mosquito is venomous, the resulting inflammatory process being rather accurately definable. It is known that in certain mosquito venoms, as is true with the venoms of many other animals, that the spreading factor, hyaluronidase, is present.(1) In the list of animal venoms treated by this paper, I have tried in general to include only those which may cause a definite toxic state in or a condition of distress to the victim. I have excluded parasites and vectors which may transmit these parasites. I have doubtless left out a few that others think should be included, but at best these should be on the same fringe border as a few that I have included. I have minimized academic discussion involving such factors as the enzymology of envenomization as well as the merits of certain treatments but have attempted to include representative references to the literature covering these subjects.

POISONOUS SNAKES

Arizona is well endowed with rattlesnakes, with 17 species and subspecies known to occur in the state. In the lowlands of central and southern Arizona, the Western diamondback and the Mohave rattlesnakes are more common than any other snake species. Unfortunately, these two species closely resemble each other in appearance. Their venoms, however, are not at all similar, as will be pointed out later.

Bites of the several species of rear-fanged snakes which are found in the state are not usually dangerous, as the fangs are not likely to penetrate the skin, and as the venom, even if injected, is of low potency. Temporary pain and some swelling may follow such a bite, but objective evaluation of the victim will reveal no marked systemic reaction, although the patient may be emotionally quite prostrated.

A true coral snake, *Micruroides euryxanthus*, does occur in the southern part of the state. It may be differentiated from numerous other cross-banded harmless snakes by the presence of red, cream, and black transverse bands completely surrounding the body with the red color adjacent to the cream. The species is far from aggressive, and records of human victims are unknown. Nevertheless, the coral snake is both crepuscular and nocturnal, and its affinity for freshly watered lawns renders it potentially dangerous to barefoot children. The feeling in some quarters that the bite of this species would not be dangerous appears to me to be unjustified. The snake is in the same family (Elapidae) as the cobras and other coral snakes, and all are quite dangerous.

Rattlesnakes are essentially nocturnal, although a few species living well up in the mountains are commonly found during the day. In the lowlands of the states, rattlesnakes are diurnal during the cooler months of the spring and fall. Even in summer they are occasionally found abroad during the day in such relatively cool environments as golf courses. In the warmest weather they may be found, quiescent, under desert bushes, cactuses, or low trees.

The physician seldom has the opportunity of treating a freshly-bitten patient. Distances between towns are great in Arizona, and at the time of the bite the victim is usually so far away from help that an hour or more may have elapsed before contact with the physician is possible. If it is an extremity which received the bite, the victim will usually have applied a tourniquet. As it is frequently occlusive or nearly so, it should be promptly removed and replaced in such a manner that venous return is not impaired but lymph flow is obstructed. Venom is transported by way of the subcutaneous lymph spaces(2) until it reaches the deep lymphatic circulation in the axilla or, in the case of a lower extremity, at the level of the knee, thigh, and groin. A rare intravenous injection of venom would likely be attended by prompt fatality,

(1) I should like to thank Miss Frances Humphrey for aid in preparation of the manuscript and my wife, Ellen Shannon, for criticism of the manuscript.)

removing the patient from the province of the physician. If the swelling does not extend the length of the extremity, the level of the edema will delineate venom progress and the tourniquet should be placed just proximal to the advancing edema. It is sometimes quite difficult to accurately evaluate how seriously the victim has been poisoned. A large snake may not necessarily inject much venom,(3) whereas a small rattlesnake may inject a great deal. Other things being equal, the gravity of the bite increases with the size of the snake. If much of the venom has reached the systematic circulation, objective criteria may be evident. The patient may be in shock with the usual symptoms of a thready, rapid pulse. The patient may be comatose and exhibit Kussmaul breathing(4) and incontinence. The shock may be due to massive envenomization, to the release of histamines by the conversion of lecithin to lysolecithin by lecithinases in the venom or, occasionally, because of anaphylaxis. Antihistamines, intravenous hydrocortisone, nor-epinephrine (Levophed®), and other customary shock-raisers may be necessary to combat the above.

Pain is usually severe, and in the absence of cerebral complications opiates should be used as needed despite undocumented criticism to the contrary.(5) Tetanus and gas gangrene antitoxins should be given at this time.

Blood typing should be done as soon as possible, as enzymatic alterations of the blood may soon make such procedures impossible. Likewise a prompt urinalysis may prove of considerable prognostic import if albuminuria and hemoglobinuria are thus revealed.(10) Leucocytosis usually occurs early with an, as yet, fairly unaltered differential.

Moribund patients, especially those bitten by diamondbacks, may hemorrhage freely from the conjunctivae, from oral and anal orifices, into viscera or intestinal lumina, or subcutaneously as evidenced by petechiae or ecchymoses.(4) Bleeding from the fang punctures is usually observed.

If signs of extensive hemorrhage appear early in conjunction with a history of probably severe envenomization, heparin should be considered as a potentially valuable tool.(6)(7)(8). On the surface, such treatment may appear irrational. However, the powerful coagulases(9) of dia-

mondback venom activate extensive deposition of fibrin early in the course of the envenomization, resulting in a loss of fibrin from the circulating plasma, rendering the blood quite incoagulable. Experimentally the use of heparin alone has not appeared to result in as favorable a prolongation of life as has heparin combined with intravenous antihistamines. The latter used alone are not efficacious, perhaps due to the extensive clotting preventing their proper transport. It should be pointed out that incoagulability of the blood is not due entirely to loss of fibrin by coagulases. Hemolysins *per se* are also present, one of which attacks prothrombin. The effects of the hemolysins are probably secondary to the consequent effects of loss of the circulating platelets and fibrinogen. Further experimental work upon this subject in connection with the diamondback and Mohave rattlesnakes is being conducted by the author and Miss Frances Humphrey. All this should point up the necessity for prompt blood transfusions in such severe cases.

Corticosteroids, while of undoubted value in the treatment of shock and, perhaps, swelling, are of doubtful benefit otherwise.(11)(12)(13) It is difficult to believe that corticosteroids would do much to promote healing in the wound site.

Such neurotoxins as may exist in the venom of the diamondback, *Crotalus atrox*, are not of significance to the physician attending a patient bitten by a snake of this species. The neurotoxins, on the other hand, are potent in the venom of the Mohave rattlesnake, *Crotalus s. scutulatus*, and indeed may contribute significantly to the death of the victim of the bite. Unfortunately, differentiation between the two above species is difficult, so that there is only one report of a bite by the Mohave rattlesnake in the literature.(43) The author saw a woman who had received a shallow bite from one fang of a Mohave rattlesnake. Aside from localized swelling, the only marked systemic effects were diplopia, dysphagia, and slight dysphonia.

Extreme neurotoxic involvement as may occur in bites of the coral snake or of certain species of the rattlesnake such as the Mohave, may produce respiratory as well as a general flaccid paralysis. High cholinesterase levels are known to occur in elapid venoms (coral snakes, cobras). (14)(15)(16)(17)(18)(19) Thus the use of neostigmine and atropine, as in a myasthenic crisis,

may be of value in marginal cases. Such treatment has, indeed, been tried in the case of a seasnake bite.(19) In the one reported case, the envenomization was overwhelming in nature, and no beneficial results were observed. Nevertheless in marginal poisoning such treatment may be of some value. For the same reason an electrophrenic respirator may be used for respiratory paralysis, although again it must be remembered that enzymes may be present in high enough titer to render the procedure useless.

Hyaluronidase content of rattlesnake venom is sufficient to cause rapid poison dispersal at the site of penetration of the fangs. In the case of a bitten finger or toe, the venom would almost immediately encircle the digit by saturating the subcutaneous tissue spaces.(20) Thus such a phenomenon as a "pool" of venom beneath the fang marks is fictitious as is the belief that incision into the fang marks will allow the "pools" to be removed. Proteolytic enzymes present in rattlesnake venom as well as the proteolytic action of thrombin and lysolecithin render the site of a bite highly ischemic and susceptible to gangrene. Thus incisions into the site of a bite, if such occurs on an extremity, should be rigorously avoided,(10)(15)(16) as such procedures can only compound existing ischemia and render a gangrenous issue more certain. Incisions should not be used at all in patients who have received minimal envenomization. (16)(22) When used, the extent of the incision, which should be made over the advancing area of swelling, must be tempered by the physician's clinical judgment. A few such incisions, forming a semicircle around the limb over and anterior to the swelling may be sufficient. Such incisions should be $\frac{1}{2}$ to one inch apart and linearly placed either antero-posterior or sagittal in direction. The swelling will expand them almost as efficiently as if they were cruciate. They do not need to be much more than $\frac{1}{8}$ inch deep to reach the subcutaneous spaces. Severe cases may require several rings of incisions completely encircling the limb. New rings should be about four to six inches proximal to the preceding ring.

It should be remembered that venom can be removed from incisions over the fang marks as has been demonstrated by the splendid earlier work of Jackson,(21) but it should also

be remembered that this removal is made possible by the free mobility of the venom due to Duran Reynal's spreading factor and not due to mythical "pools" of venom. The same spreading factor, of course, facilitates removal from less dangerously placed incisions behind the damming tourniquet. Bites on the face or body may effectively be treated only by systemic measures, as tourniquets are impractical.

Excision of venom-laden tissues has been advocated.(23)(24) Unless a fatal issue is anticipated in a victim bitten not more than an hour previously, such treatment is too mutilating to be considered and, of more significance, is probably useless.

Suction may be applied to the incisions by means of such things as suction bulbs, breast pumps, or suction machines. Alternating positive and negative pressure by a Pavex boot is an effective way to remove venom. In the case of severe envenomization, suction may be useful over the course of 24 hours.

The application of extremes of heat or cold to the site of a rattlesnake bite should be avoided. As has been mentioned, considerable local ischemia is present, and even the moderate heat of a heating pad turned on low may lead to bullous formation and skin slough that could otherwise have been avoided. The use of extreme cold such as that afforded by ice water (22)(25) is outrageous. The advocates of ice water have begged the question by bringing up such unreal comparisons as the 85° F. hypothermia used for short times in cardiac surgery as justification for lowering tissue temperature to 4-7° C. This does not obviate the fact that ice water causes much more extensive gangrene, may cause immersion extremity, and in many cases even abjectly fails to control swelling, as is claimed for it.(10)(15)(16)(25)(26) Increasing numbers of cases of patients damaged by ice water are appearing in the literature, and it has even been pointed out(25) that the patients obtaining maximum benefits as reported by the advocates of ice water responded more unfavorably than did those reported by the reviewer as receiving no treatment at all.

Elsewhere I have presented some of the difficulties attending the use of antivenin.(10)(16) Wyeth has recently developed a new antivenin which appears to be much more effective than

that developed previously.(27)(28) The data concerning the efficacy of this antivenin are weighted somewhat in favor of the antivenin, but there is no doubt that a greatly potentiated product is now available. I use antivenin only in cases of severe envenomization, and then only as a supplement to such measures as tourniquet, incision, and blood replacement. The decision to use antivenin should be made only after practice of the same rigorous discipline for skin testing as is applied to tetanus antitoxin. Vastly larger quantities of horse serum will be used than is present in the antitoxin, and severe anaphylactoid reactions are known to occur from indiscriminate use of antivenin.(16) When antivenin is used, the quantity employed should be larger if the patient is small. One ampule of reconstituted antivenin should be injected subcutaneously just in advance of the swelling. Several puncture sites may be used to surround the extremity with the antivenin, but this is probably unnecessary, as the hyaluronidase in the venom would probably cause rapid dispersion. If a serious bite is being treated, it may be well to inject two or more ampules intramuscularly in the usual sites. Intravenous injection should not be attempted unless it is felt that the effects of the bite would be overwhelming. Additional ampules may be given at half hour to two hour intervals for as long as it is felt that the patient is in danger.

Every case of rattlesnake poisoning should be hospitalized. Delayed complications are not unusual for as long as a 72-hour period. There seems little reason to believe that danger to the patient would be present after this time except for the usual secondary reasons such as a gangrenous aftermath or toxemia from excessive blood destruction. Such complications as bacterial infections should be treated with antibiotics.

Complete recovery from rattlesnake poisoning may be slow. Necrosis in the area of the bite may take as long as two months to heal completely. Severe muscle spasms in an extremity which was previously badly swollen may occur for as long as two or three years following the bite. Such episodes seem to be reduced by a high calcium intake. If they are severe enough to be immediately treated, calcium gluconate intravenously will give prompt relief.

An anticipated sequela to a bite from a coral

snake would be emotional instability for several months to a year following the bite.

Mortality from snakebite varies tremendously, being higher in children. Over the country as a whole, the death rate in the 1000 persons bitten annually is about 3%.(43) It is higher in the Southwest, perhaps nearly 10%. As these figures apply to both treated and untreated cases, they are both encouraging and discouraging. A person in Arizona bitten by an extremely large rattlesnake could anticipate the probability of a mortality rate as being about 50% if untreated.

GILA MONSTER

The physician rarely sees victims of Gila monster bites. Gila monsters are found in the southern and western portions of the state except in the Gila River drainage below 1000 feet. They are not commonly encountered. When cornered they put on a rather formidable display of hissing with wide-open mouth, which discourages most people from handling them. The venom is manufactured, or at least stored,(30) in submandibular salivary glands, and it is released into the mouth where it may be carried by strongly grooved lower teeth into the flesh of the victim. The bite is extremely painful(29) and is followed by rapid swelling and advancing edema in a manner similar to that produced by rattlesnake venom. Due to an unfortunate tendency of the lizard to hang on and chew with his powerful jaws, the area of the bite is likely to be considerably lacerated. Hemolysins present in the venom may result in localized bleeding persisting for many hours or longer.(29) Powerful neurotoxins present in the venom(29)(31)(32) may produce flaccid paralysis with fatal extension to the respiratory center. In the human victim, tinnitus and dysphagia as well as emotional instability are known to result from the bite. From experimental evidence(32) there is little doubt that the venom of the Gila monster is rather potent. However, with a comparatively inefficient mechanism for injecting the venom, it would be difficult for these animals to fatally poison a man. In spite of a great mass of lurid literature to the contrary, there is no substantiated case of a human death due to a Gila monster bite. Nevertheless, envenomization should be treated by the physician as a serious matter, and the patient should be hospitalized for observation. The use

of a tourniquet may be employed to slow absorption of the venom into the blood stream and to allow it to be detoxified, presumably by the liver. Supportive treatment should be maintained as necessary in the manner described under snakebite. No antivenin has been developed, nor need be expected to be developed, for treatment of poisoning by this lizard.

TOAD

An interesting form of envenomization occasionally found in other animals, usually in dogs but obviously not much of a problem to humans may occur from ingesting the heavy, milky secretions given off by the parotoid glands of the Colorado River toad, (neither analogous nor homologous to the human parotid) *Bufo alvarius*, after it is roughly handled. These large, olive green toads are found in moist environments in the southern part of the state. The most active principle in the venom, alvarobufotoxin,(44)(47) is digitalis-like in its action, and poisoning may cause emesis, partial paralysis, and death in cardiac systole. Treatment is non-definitive and poor. *Bufo alvarius* parotid secretions do not contain epinephrine as do those of many toad species of the southern hemisphere.(45)(46)(47)

SCORPION

While fatalities from scorpion sting are not common in southern Arizona, they do occur in children at the rate of three or four a year and in their aggregate equal or exceed the fatalities from rattlesnake poisoning. Although two species of *Centruroides* have been presumed to be responsible for severe envenomization, it appears that only one species, *C. sculpturatus*, is present in the state, the other being but a melanistic color phase of *C. sculpturatus*.(33) Symptoms of poisoning are variable. They may include tonic convulsions, salivation, respiratory paralysis, pilo-erection, hypertension, vaso-constriction, mydriasis, and trismus.(34)(35) Burning pain usually accompanies the sting with an area of numbness around the puncture. Convulsions are by no means always present. Drowsiness and slurring speech may ensue. Local pain may become worse, remain the same, disappear, or occasionally be absent. The convulsions may be similar to those of strychnine poisoning in that they may be induced by touching the patient or even by loud noise. Systemic symptoms usu-

ally appear in less than an hour but may, on occasion, be delayed for several hours.

Due to the extremely superficial deposition of scorpion venom and due to a lack of proteolytic enzymes, an ice bag may be used in conjunction with a tourniquet for slowing absorption of the venom; thus reducing or obviating severe systemic reactions. Hyaluronidase is known to be contained in the venom.(36) Action on the smooth muscle has been compared to that of serotonin.(37)

A specific antivenin has been prepared for use in *C. sculpturatus* poisoning. The efficaciousness of the product is in doubt, due in part to a lack of accurate publication upon its use in man. Such information as is available has not been obtained in a manner acceptable to minimum scientific standards. Great newspaper publicity was given to the antivenin at the time when there was a lobby in Congress for the purpose of introducing a bill to allow shipment of live scorpions in the mail. The resulting blurbs on at least one occasion gave praiseworthy credit to the effectiveness of the antivenin in saving the life of a person not even poisoned by a scorpion. It still remains the province of the medical man to determine the cause for convulsions, and hyperthermia is not an indication for the use of antivenin.

This does not mean to say that the antivenin is never effective. It is hoped, however, that these remarks may stimulate more accurate observations upon the effects of treatment, bearing in mind that most of the stings would not terminate fatally whether treated or not. It should be understood that the antivenin is rated as an experimental drug, and thus for medico-legal reasons written permission should be obtained whenever possible from the victim or parents of the victim previous to its administration. (The antivenin may be obtained from the Poisonous Animals Research Lab, Arizona State College at Tempe, Arizona.) Local pain may be controlled by a 2% procaine-epinephrine solution. Opiates may be used for severe pain and convulsions. A total of 50 mg. of intravenous morphine sulfate was necessary to control the pain of one man who had been stung on the penis.(35) Demerol® should not be used, as there is some evidence that it acts synergistically with the venom. Barbiturates in hypnotic doses may occasionally be life-saving. Severe

convulsions may be controlled with pentathol anesthesia followed by instigation of oxygen by a closed system.

SPIDERS

Black widow spider bite is somewhat better known to the physician, probably due to its greater incidence. In the presence of severe abdominal or other muscular cramping following a history of spider bite, an attempt should be made to verify envenomization by locating the site of the bite. Two minute fang marks are usually present. Due to a paucity of the Chick Sale-ian edifices so common in the Southeast, bites upon the genitalia are fortunately not common in Arizona.

Ten percent calcium gluconate or lactate in a dosage of 2.5 to 20 cc. based on 20 cc./150 lbs. may be given intravenously for prompt control of abdominal cramping.(38) If the cramps are not relieved, intra-abdominal pathology should enter the diagnostic picture. It should also be remembered that occasional cases of black widow spider bites have undergone appendectomies. ACTH and cortisone have been used with reported good results,(39) although a rationale for the use of corticosteroids is not clear. An immune serum, Antivenin *Latrodectus mactans* (Wyeth), has been prepared. Two ampules should be given in the presence of severe symptomatology. The calcium gluconate may be repeated as necessary for the control of cramps. With this treatment the patient usually recovers completely in one or two days, although sporadic cramping may occur for one or two weeks after the bite. If the antivenin is used, the usual skin tests for sensitivity to horse serum should be conducted. Every patient suspected of having been bitten by a black widow should be hospitalized. Estimates of fatality due to the bite may range from 1-5%.(40) Hyaluronidase is known to be present (40) in the venom.

No other Arizona spider is dangerous to man. The bite of any of the large species of tarantulas in Arizona can be quite painful. The author was bitten on the thumb while handling a large individual. The bite was attended by considerable pain lasting for two hours. Minimal swelling was experienced, but the bitten area remained unusually sensitive to pressure for three days.

CENTIPEDE

A somewhat more severe local reaction may result from bites of large centipedes of the genus *Scolopendrus*. Local necrosis and suppuration frequently follow the bite, attended by the expected local lymphadenopathy. Systemic symptoms may consist of headache and generalized aching, nausea, and even vomiting. Treatment is symptomatic. Prolonged use of moist hot packs may minimize discomfort and subsequent necrosis. Immediate application of ammonia has been suggested(42) for prompt relief of pain. The wound may be painful for as long as a month, and healing of necrotic areas is slow.

HYMENOPTERA

The stings of bees, wasps, and velvet ants are too well known to elaborate. The sting of honey bees should be scraped out rather than pulled out, as the latter procedure may cause the attached poison reservoir to be pinched and more venom thus be squeezed into the wound. Local application of an ice bag will relieve pain to some extent. A fair per cent of people are allergic to hymenopteran stings, especially apiary workers who become sensitized to the sting of the honey bee. Most of these allergies can be treated with corticosteroids and antihistamines. A state of anaphylaxis may be reached or approached by occasional individuals who should, of course, be treated with epinephrine and the other usual supportive measures.

HEMIPTERA

Finally, a word should be said about bites of the assassin bug or cone nose, locally known as the Walpai tiger. This hemipteran belongs to the family Reduviidae, notorious in Mexico and South America for carrying Chagas disease. The Arizona species carries no known disease but injects a poison or virus which displays a characteristic symptomatology on which the existing literature carries a surprising paucity of information. The bites are usually inflicted when the patient is asleep or quiet, the insect thus being able to ingest blood without immediate disturbance. The victim usually awakes with severe pruritis or pain about the site of the bite. The bitten area becomes erythematous, indurated, and feverish. Nausea or vomiting may supervene within an hour as may

severe abdominal muscular cramps. A macular rash occasionally occurs and may cover the body within 24 hours. Induration and suppuration frequently occur at the site of the bite. The more common systemic symptoms consist of headache accompanied by generalized aching. The patient may feel generally depressed and enervated with mental depression and ennui persisting for two weeks. The rash is usually transitory. Local healing is slow with induration apparent for a week or more. Necrosis may not be resolved for three weeks or longer.

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Useful Drugs for the General Practitioner

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THE PURPOSE of this review is to describe briefly the action of some drugs which are useful to the general practitioner. Each day physicians receive many pieces of mail which proclaim new therapeutic agents. Only a few of these will be included. Many of the drugs are included as reminders they have stood the test of time and are very useful.

BARBITURATES

This is still a very important group of drugs as three hundred tons of barbiturates are used per year in the United States. An average of 15% of all suicides are the result of barbiturate poisoning. During the years, 2500 different compounds have been synthesized and about 50 marketed for clinical use. The action is one of a depressant on the cerebral spinal system. Normal sleep usually is produced. Even the electroencepholgram tends to assume a normal sleep pattern. Habituation is not frequent. Addiction does occur and is more serious than morphine. Barbiturates disperse to all tissues of the body and even pass the placental barrier into the tissues of the fetus. Destruction in the body or elimination by the body depends on the type of barbiturate used. For instance, barbital and phenobarbital are excreted mainly by the kidneys, whereas pentobarbital and secobarbital are debraded by the liver. The barbiturates remain the largest group of drugs prescribed as a sedative during the day time and as a hypnotic at night. If a patient has taken too much barbital, the general tendency has been to over-treat these patients. Usually supportive measures alone are sufficient to counteract the toxic effect. The dosage used of the various barbiturates is dependent upon the type selected.

CHLORAL HYDRATE

This too is a central nervous system depressant, producing a very normal physiological sleep. There are no after effects and no untoward effects in other tissues. It remains one of our most effective hypnotics. The capsule form is very convenient to use.

TRIDIONE

This is highly specific in the treatment of petit mal epilepsy. It is given in a daily dose of 3 to 9 capsules, each containing 0.3 gms. Inasmuch as it can produce serious toxic effects, such as blurring of vision, dermatitis and blood dyscrasias, all patients must be watched carefully, with frequent examination of blood and urine.

SALICYLATES

Salicylates lower body temperature in the presence of fever, relieve pain and act as an excellent therapeutic test in acute rheumatic fever.

Caution must be used when the pleasant-tasting forms are put in homes where there are children. Over a hundred deaths occurred last year in children who had chewed and swallowed too many tablets.

Recently many combinations of salicylates and the adrenal steroids have appeared on the market. So far experience has shown that approximately 20% of the patients will notice more benefit than they had from salicylates alone.

CODINE

Acts as an analgesic as well as a cough depressant. The continuous use as a pain reliever is highly discouraged. Salicylates are just as effective.

ARTANE AND PAGITANE

The two preparations are valuable in relieving the muscular tremors of Parkinson's Disease or in arteriosclerotic conditions. It is convenient and effective to change from one preparation to the other at times.

COLCHICINE

Colchicine is still the specific type of medication which is used to relieve the symptoms of acute gouty arthritis, although no one knows the mode of action. It is to be remembered that there is no effect on uric acid metabolism. Another interesting effect of colchicine is in the relief of pain due to the neuritis which is seen

in some patients suffering with blood diseases. Care must be exercised in the intravenous use of colchicine as thrombophlebitis occurs rather frequently and can be very painful.

AMPHETAMINE

This is a form of medication which stimulates the higher nervous centers. There is no explanation for the stimulation of the brain which occurs when it is used. The psychic effects depend on the mental state and the personality of the patient as well as the dose which is given. Its use in weight reduction is dependent upon the reaction of the brain to refuse foods. Apparently tolerance does not develop. It is also of great use in the treatment of narcolepsy and post encephalitic Parkinsonism. Wonderful in the treatment of mood disturbances, but poor in the treatment of a true psychoneurosis. Many different recent preparations are available.

BELLADONNA

This still remains one of the finest drugs used to control hyperperistalsis, to relieve pylorospasm and decrease motility of the stomach wall. There is no increase in the acidity or volume of gastric juice when belladonna is taken.

ANTI-HISTAMINES

In no other class of therapeutic agents does the physician enjoy a greater choice of preparations. It acts as a blocking drug. There are many uses for the anti-histamines, such as acute urticaria, angioneurotic edema, certain forms of dermatitis, hay fever, serum sickness, the common cold due to allergy, and even motion sickness and in some forms of dizziness. If one form of an anti-histamine is not effective in the treatment, then it is possible to select another one, as they are selective in action.

DIGITALIS

Digitalis remains the mainstay in the treatment of heart disease even today. The main property of digitalis is to increase the force of myocardial contractions. Other responses, such as slowing of the heart rate, increase in cardiac output, decrease in cardiac enlargement and reduction in venous pressure are explained on the basis of the increased force of systole. Constantly there are new preparations of the different alkaloids of digitalis which are appearing on the market. A word of caution should be

remembered always — to use one type of digitalis or its alkaloid in order to understand its uses, and then stick to it. Digitalis is excreted very slowly from the body over a period of 10 to 14 days.

RAUWOLFIA

This is an effective preparation to use in the treatment of hypertension and also as a sedative. Here too a great many new preparations of the drug are appearing on the market, and only in the past few months has the pendulum appeared to seek its normal regarding its indications and contra-indications, as they are developing rapidly.

DIAMOX

This preparation produces diuresis by depressing tubular reabsorptive transport of electrolyte. In the mercurial diuretics chloride reabsorption is affected, whereas with Diamox, it is bicarbonate. This is an excellent diuretic.

PROBENECID

Probenecid blocks kidney tubular reabsorption of uric acid. An average dose of 0.5 grams twice daily will lower the level of blood serum uric acid by 30%. It has been found to be of great value in helping the body to excrete excessive amounts of uric acid. Thus it tends to prevent uric acid tophus formation and also helps to dissolve tophi, which have already formed. When a patient has a serum level over 7.5 mg. per cent the daily use does tend to decrease the number of recurrences. It is of no value in the treatment of the acute attack. Its only action is to increase uric acid excretion.

B A L

British Anti-Lewisite has proven to be of great value in treating poisoning due to gold, mercury and arsenic. In mercurial poisoning when used very early, it is life saving. Its greatest use today is in the treatment of reactions due to gold as they occur in patients with rheumatoid arthritis who have been on a course of gold therapy. Some patients are allergic to B A L, so great caution should be used with the first few doses.

SULFONAMIDES

5400 sulfonamides have been studied since the discovery of sulfanilamide. Less than 20

of these have obtained any therapeutic importance. Sulfadiazine is the most widely used of all. Sulfonamides prevent bacterial growth and then the natural resistance forces of the body kill the remaining bacteria. There are a few reactions to the sulfonamides. These are urinary, drug fever or blood dyscrasia. The urinary symptoms are due to a deposit of some of the sulfonamides in the pelvis of the kidney and the ureters. The use of alkali plus a great deal of fluids will counteract any of these effects. However, there are some of the sulfonamides which precipitate very little in the urine. Drug fever apparently is due to sensitivity and develops in a small percentage. Any reaction which may occur in the blood will appear 2 to 3 weeks after the drug has been started. The mixtures of sulfonamides are being more widely used because the total amount of the sulfonamides can be present in the urine without precipitating out of solution than would be possible if only one drug were used. There is a tendency today to use more sulfonamide therapy than several years ago. Hemolytic streptococci and gonorrheal organisms are very sensitive to them.

It is interesting to note that sulfadiazine and penicillin are the most effective combination to combat the various coccal meningitis diseases. Streptomycin and sulfadiazine seem to act best in brucellosis. Tetracycline and sulfadiazine are most effective in treating influenza meningitis.

ANTIBIOTICS

The use of antibiotics with the discovery of penicillin, and since then many new preparations have been developed in which the activity of the spectrum overlaps that of penicillin, such as tetracycline. The uses of these drugs have been spectacular in combatting infections.

IRON

Iron has been found to be more effective when taken between meals instead of immediately after meals. Also, it should be used only for blood deficiency anemias, not as a general tonic.

VITAMIN B₁₂

The value is in pernicious anemia only.

FOLIC ACID

Useful in nutritional macrocytic anemias.

HEPARIN and DICUMEROL

The use of these two preparations has been of great value in the treatment of thrombophlebitis and in coronary thrombosis. In thrombophlebitis, the embolic phenomena has been reduced by 65%; whereas the death rate of patients with coronary thrombosis has been markedly reduced. The exact percentage is not known.

RADIOACTIVE ISOTOPES

Phosphorus-P³² has a half life of 14 days. It is interesting to note that the average penetration is 2 mm. with the maximum of 7 mm. Thus most of the action from P³² is located in the tissue which has taken up the isotope. It is of great value in the treatment of polycythemia vera.

Iodine-131 is another radioactive isotope. Its half life is 8 days. It is useful in the diagnosis and treatment of hyperthyroidism.

Gold-298 is also another isotope and its greatest use is in the treatment of metastases involving the abdominal cavity and the pleural cavities.

ACTH and ADRENAL STEROIDS

Every day our mail has several brochures describing the spectacular uses of these preparations. Patients with connective tissue diseases certainly have lived longer, while in allergies, hypersensitivity to drugs, replacement in Addison's Disease and in the inflammations of the eyes, they are of great value.

In rheumatoid arthritis, rheumatoid spondylitis and in gouty arthritis, the symptoms and signs improve temporarily but the progress of the disease is not stopped.

BUTAZOLIDIN

A new drug which is very effective in controlling pain of the muscles and joints. Daily doses of 300-400 mg. or short-term large dosages are handled well by most patients. Its use in acute peri-arthritis, calcified supra-tendonitis and acute gouty arthritis oftentimes is spectacular.

REMARKS

This is a very brief review of some drugs which are of use to the general practitioner.

REFERENCE

The Pharmacological Basis of Therapeutics, Second Edition (L. S. Goodman and A. Gilman, MacMillan Company, 1955).

THE *President's* PAGE

Recently, your state association has been invited to participate in discussions to consider a possible further extension of the socialization of medicine under the guise of extended utilization of Blue Cross and Blue Shield services. So far, only discussions have been in progress, but no definite steps have been taken to commit the medical profession to approval of such a plan.

Others who are invited by the State of Arizona Department of Public Welfare are the representatives of the Blue Cross and Blue Shield, and representatives of two larger county medical societies as well as the Arizona Hospital Association. A sketchy outline of the proposed plan was presented in a recent letter. It was suggested that an attempt would be made, apparently by the State Department of Public Welfare, to seek funds and authority from the Legislature to inaugurate a program under which certain groups of recipients of public assistance might be insured under Blue Cross, Blue Shield and receive the same benefits as those who pay for their own insurance. I believe that matching federal funds might be available for payment of such premiums.

Again, I may be "talking through my hat"; but I believe that we are retreating once more before the onslaught of nationalization or socialization of medicine. It is still the taxpayers' money that purchases medical care for these people, — whether it be through the paid services of a county physician in a county hospital, — or whether it be through a devious route of cloaking such a plan with respectability by having the recipient of such benefits present a card proving to the hospital or doctor that he is entitled to Blue Cross, Blue Shield benefits. Of course, it looks respectable because the patient is promised free choice of doctors. However, this is not the prime consideration; it is merely a bait to tempt the doctors into acceding to such a plan.

It is my opinion that office procedures and services are the greatest requirement of this segment of our society, and in-patient hospital care is not the greatest requirement. This may lead to serious abuses of Blue Cross-Blue Shield type of services similar to those now experienced in England under nationalization of health, namely too frequent and unnecessary hospitalization.

Your President wishes to keep an open mind on this problem and swallow some of the bitterness he experiences when these plans are being introduced. I honestly realize that every economic segment of our population deserves good medical care — but will this plan really provide it without inviting the abuses that I have mentioned? I invite your comments and letters pointing out to me your views either for or against such a plan. They will be most helpful in guiding our deliberations on your behalf.

Thank you for your kind help.

A. I. Podolsky, M.D.

President

THE ARIZONA MEDICAL ASSOCIATION, INC.

The History of Medicine in Arizona

By Howell Randolph, M.D.

GOVERNOR BENJAMIN BAKER MOEUR, M.D.

(Conclusion)

NOW LET us hear what another nephew, Sid Moeur, has to tell us about Governor B. B. Moeur.

H.R. Whatever made Dr. Moeur decide to run for Governor, do you recall?

S.M. Doc always had an unsuspected ambition to get into politics. He thought it was time for a change and he just thought he was going to make that change. I talked to him a long, long time and tried to dissuade him from it. I told him that a country doctor didn't have a Chinaman's chance and it just wouldn't work. I pointed out that a man had to be in politics to be elected Governor and that he had never been known in politics. He had had some acquaintance with my father, who had been Land Commissioner, and the name of Moeur was pretty well known so, he just decided that he could do it and he did.

I worked very closely with Doc and he had a very peculiar method for campaigning. He'd buy a gallon of gas at every service station and drive into a station and say, "fill it up"; of course they couldn't put but a gallon in and he'd say, "I'll be —, I thought there was room for a whole five gallon." In that way he got acquainted with everybody. He also had a peculiar way of paying everything by check if it was a dollar or more so they would know the signature. And, of course, he couldn't talk.

H.R. You say he couldn't make a speech?

S.M. We used to try to train him on that and finally gave up.

H.R. How did he make his appearances, did he use the radio any?

S.M. No he just went out in that old Cadillac car he had and beat the brush. "I'm Doc Moeur and I'm running for Governor" and finally we got him so he could make one or two fairly decent talks. He would shout "Taxes can be, must be, and will be reduced." I think he went on the radio once or twice, but in those days, you know, they still had Precinct meetings. It wasn't like it is now, you could go out to King's Precinct and get a thousand people to come out.



Benjamin B. Moeur, M.D.

H.R. Now they don't turn out for that kind of thing.

S.M. It was still like that in 1932.

H.R. How much money did he spend on his campaign, did he spend very much?

S.M. Well, he spent what must have been thought of as a good deal in those days, but it wouldn't be considered much in these times.

H.R. But what groups did he have behind him, any particular group?

S.M. Not a single dog-gone one. I told him "you don't have any organizations" and he replied, "B' God, I don't need them". He just had a lot of friends who said, "if you want our vote, we'll help you".

H.R. Do you remember any stories? For instance, like the one I've heard about the time he was put up on a manure spreader for use as a speaking platform up in Wickenburg and he said "this is the first time I ever run for Democratic office on a Republican platform" — I mean that kind of story?

S.M. Yes, I did hear that he talked from the back of a manure wagon, that was after he was nominated, I think. Down here in the Primaries, he got all excited one night attacking Hunt on his patronage, demanding that a man who worked for the Highway Department vote for him (Hunt), you know, or get fired. He was out in King Precinct speaking from the edge of a car. Old Judge Niles and I were listening to him, he did pretty well until he got excited. He started telling the crowd what he would do if he were an employee and Hunt asked him to vote for him or else. Well, then he stuttered, "B' God I'd just shoot his damned old belly full of buckshot". Hunt did have a big belly, you know. Then during his second campaign one night up at Glendale he had a little trouble. A man jumped on him about having an employee of his in the first term get away with some money. He said. "Well, even Jesus Christ had trouble with his disciples".

This is the way I would approach this story — just a country doctor who absolutely was a country doctor, who decided he wanted to be Governor who went out and accomplished just that. He did it through sincerity and the fact that he had no deceit in his set-up and no political conniving, or else he was too smart to let anybody think he was guilty of any political conniving. He relied a great deal on his friends. He had delivered hundreds and hundreds of babies all over this part of the country, you know; they were all very much for Doc and a whole lot of this was enthusiasm to try something new. The people seemed to genuinely like his enthusiasm his somewhat different approach to politics. I was back in Chicago during his administration attending a number of important conferences. One night at the South Shore Country Club, they kept me on the pan about Doc Moeur for two hours. They wanted me to tell them what kind of a guy this was out there in Arizona who had made such a nice reputation and they all had had to much fun reading about.

H.R. Did he get write-ups in the national magazine?

S.M. Oh, my God! Everything from Time magazine down or up, whichever way you want to go. They knew more about him in Chicago because of his eccentricities than the people in Arizona did. They stopped him once, you know, he got a write-up in Time and he got

so mad he wanted to go shoot them all. He was going up from Roosevelt to Payson and they stopped him. They heard he was on the way and somebody built a fire along the road. It was a cold night and they took him down the river to deliver a baby, the family named the baby Benjamin Baker. They wrote it up in Time, I guess insinuatingly, so he raised hell about that.

Doc was principal speaker at a Jefferson banquet one night here, he had his tux on and was all ready to make his speech when I had to go up on the speaker's platform and explain that old Mr. Citron was dying with an obstruction and he wouldn't let them operate on him until the Governor said it was all right. Doc takes off and goes down to the hospital to see him and tells him that he is a damned old fool, B' God he should let them get busy"; so they cut him open and he is still alive today. Doc returned to the banquet and delivered his speech.

I remember one more incident you might like to have. During Doc's first administration, he was called back to Washington at the time President Roosevelt called the first Governor's Conference. Stuart Bailey tells the story about when they were in the presence of the President, along with all the other Governors; President Roosevelt reached over and grabbed Doc by the hand and said, Governor, how are you getting along?" Doc answered, "Confidentially, Mr. President, I'm having a hellava time". Roosevelt grinned and reached over and said, "confidentially, Governor, I'm having a hellava time, too".

The impression gained on meeting Governor Moeur was that of a friendly, boyish, unsophisticated man, somewhat embarrassed by the prominence of his position, but enjoying it and life. He did not have to try to keep on speaking level with the people, he was just there. When the elevator operator opened the door with her usual "going up", he replied with the entirely unnecessary, "Yes, God willin'."

When my wife called him, alarmed over a three hour disappearance of our three and four year old daughters, he said, "I'll have m' Highway Patrol out right away, honey".

Dr. Moeur's approach to government was to keep the expenditures down. He held the now seemingly forgotten belief that taxes and tax rates were in some way related to government

spending. During the beginning period of Federal pump priming and the first four years of the New Deal, State government expenditures were cut from \$13,698,301 in 1930-32 to \$8,840,888 in 1932-34. For better or for worse the legislature followed his recommendation and passed sales, luxury and income taxes to help carry the burden, a good part of the proceeds being used to retire the bonded indebtedness by \$1,000,000 during his first term of office. State property taxes were reduced by about one-third during his first two years.

In his second campaign he said: "Arizona was sick and there is no medicine which will act as a panacea for a patient so chronically ill as was this patient in 1933. I am glad to report that the patient is past the danger stage and that the remedies which have been applied give promise of effecting a complete recovery."

He believed the depression could not be overcome by raising taxes but by tightening belts and going to work at the local level to take care of hardship in our own neighborhood.

He believed that Public Health was the responsibility of the medical profession of which he was a part. In his own experience, he had practiced medicine in the interests of the Public Health, so he appointed a young man in General practice, Dr. George Truman, as Superintendent of Public Health to do the job on a half time basis with a 1935 budget of \$28,645.00. The budget for 1956 was \$1,602,485.55.

In the course of cutting State government expenditures, he caused many to lose their jobs. He failed to build a politically strong machine and some of the politicians were out of step with him. For example, the State Auditor selected two or three of his appointees to crucify by holding up their pay checks while questioning some item in their departmental budgets, giving the matter the widest publicity just before election time. The budgets were usually approved, but the political barbs stuck. The unrest and unhappiness of the depression, although easing, helped to beat him in the third term Primary. He was a conservative in a time when radicalism was in the ascendancy in the United States.

Dr. B. B. Moeur was a medical man who assumed responsibility for the public interest. He offered to serve, he was chosen and he stands in history as a credit to the Profession and to the State of Arizona.

NEWS ITEM

William Snyder, M.D. has returned to private practice in Phoenix after serving in the U. S. Air Force as Chief of Dermatology at Lackland Air Force Base in San Antonio, Texas. Dr. Snyder practiced in Phoenix prior to his residency at the Cincinnati General Hospital and the Skin and Cancer Hospital of Philadelphia. He was certified by the American Board of Dermatology and Syphilology in 1952, and is a Fellow of the American Academy of Dermatology and Syphilology.

THE STRESS OF LIFE by Hans Selye, M.D. 324 pages. (1956) McGraw-Hill. \$5.95.

Hans Selye has been acclaimed throughout the world by physicians, scientists, and psychologists for his brilliant exposition of the stress theory. In language easily understandable the man who has been called "the Einstein of medicine" explains his modern stress concept: that the reaction of our bodies to outside agents is often far more significant than the agents themselves.

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Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.
7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.
8. Illustrations—Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.
9. Reprints—Reprints must be paid for by the author at established standard rates.

The Editor is always ready, willing, and happy to help in any way possible.

(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

PREPAREDNESS

1957, almost seven years since the onset of the Korean war and the realization that preparedness is essential. What has been done in Arizona to prepare for total war? Have serious steps been taken to prepare our people?

What is the plan to follow? Evacuation! Not shelters!

Do we have an alarm or siren systems? In Phoenix, yes. In Tucson, no.

What coordination has been established between the Civil Defense organization on a State wide basis and our State Public Health Department? None to my knowledge.

What are the plans for evacuation of our major communities or for our minor communities to receive the evacuees either from Tucson or Phoenix or from the coast should such be necessary? No established organization to date.

What steps have the smaller communities taken to receive a large number of injured in addition to the refugees? None.

What have the hospitals done to plan evacuation of their patients? Little, even though it is imperative to save life and now becomes a necessity to pass the accreditation examination.

Preparedness is a must. This is an insurance policy to be purchased. The plans are essential even though we hope that it will never be necessary to use them. These steps and preparation for all out war must be taken. We cannot allow hackneyed politics or politicians to delay them. Do not allow your inertia to delay them. Medical plans are urgently needed.

HOSPITALS LIABLE FOR EMPLOYEES ACTS

IN THE past hospitals have been able to disclaim responsibility for certain acts of their employees, particularly when these acts came under the definition of medical acts, in which case the responsibility shifted to the physician under whose direction these acts were presumably done. Since certain duties of hospital employees could also be classified as administrative acts, the burden of responsibility some-

times lay on the definition of and the distinguishing between medical acts and administrative acts of employees. To further complicate the situation there has been a distinction in many places between non-profit hospitals and other institutions, with the non-profit organizations enjoying a certain immunity from responsibilities which other institutions did not. Arizona is among the states which have abandoned this doctrine of immunity of charitable institutions to liability for the acts of their employees. This position has been strengthened by recent decision of the Court of Appeals of New York concerning an error of blood typing which had been done in one of the New York hospitals. This went through the Trial Court and the Appellate Division and finally through the Court of Appeals which ruled that although the test was a "medical act", it was performed "not by a physician or nurse but by a technician who was employed and paid by the hospital, and who was so far short of professional status or attainments that only four to six weeks' training was necessary for the job. She was no independent practitioner of a learned profession . . . but a salaried employee." The opinion written by Justice Charles S. Desmond and reported in Medical News for September 10, 1956, says further, "Not only do they (modern hospitals) furnish room and board to patients but they sell them services which are 'medical' in nature and, though furnished on physicians' orders, are performed wholly by and under the control of the hospitals' salaried staffs.

"What reason compels us to say that of all employees working in their employers' businesses (including charitable, education, religious and governmental enterprise) the only ones for whom the employers can escape liability are the employees of hospitals?"

The physician should not forget that this has no effect upon his liability for any medical acts by any employees, either his own or the hospital's done under his supervision or orders. He always has been and apparently still remains liable.

R. Lee Foster, M.D.

SHOULD THIS JOURNAL BE CONTINUED?

- D**O YOU approve of the consideration of
- Medical-Economic articles?
 - A discussion of Medical-Social factors?

c. Presentation of medical-legal problems?

Are you willing to contribute articles to this publication and particularly will you submit interesting case reports?

What features of our present issues do you feel should be altered, discontinued, or encouraged?

What are your suggestions for improvement?

Please submit your comments to the Editor — now.

BOOK REVIEW

THE PHILOSOPHY OF MEDICINE by Dr. William R. Laird is an interesting presentation of that side of medicine so rarely discussed. Unfortunately, at times it suffers from a lack of continuity and even seems to become devious. However, it scans that important aspect of the practice medicine that is too frequently ignored or passed over, both in medical school and in clinical practice. It is recommended reading for all students and practitioners of medicine.

PRE AND POSTOPERATIVE CARE IN THE PEDIATRIC SURGICAL PATIENT edited by William B. Kiesewetter, M.D. 347 pages. (1956) Year Book. \$7.

Although small, this volume contains advice from 16 contributing authorities, discussing the basic care given at the Children's Hospital, Pittsburgh. To facilitate reference an outline form is used and the contents are well indexed and cross indexed.

Stacey's Medical Books, San Francisco

LESIONS OF THE CERVICAL INTERVERTEBRAL DISC by R. Glen Spurling, M.D. 133 pages. Illustrated. (1956) Thomas. \$4.75.

A pioneer of the problems associated with degenerative disc syndromes gives us a fine monograph. The personal philosophy.

Stacey's Medical Books, San Francisco

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TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M.D.

ANOTHER new word has popped up in articles on the **medical management of disasters**. Sorting of the injured is called **'triage,'** and it is said to be a prime necessity when large numbers of people are hurt. . . . Lt. Col. H. H. Ziperman of the AUS Medical Corps urges that the best-trained surgeon available do the job. He must decide questions of treatment, transportation, return to duty, etc. He must decide which cases are hopeless and can only be given medical comfort during the height of emergency. This is a hard chore for physicians who have been trained to keep everyone alive, even in hopeless extremis, and the public would probably think it cruel.

Another Medical Corps officer (USAF), Lt. Col. Frank Perri, feels sure that **BELL'S PALSY** may be handled successfully and with great dispatch. He uses Thiamine and other vitamins by mouth, and daily IV use of **HISTAMINE DIPHOSPHATE** (2.75 mg. in 150 cc. of saline, at the rate of 30-40 drops or less per minute). This is not a new method for nerve tissue lesions, and had its vogue in multiple sclerosis. . . . He also uses galvanic stimulation and mirror-controlled exercises of the face muscles.

It is reported from the Navy and Marine Corps statistics for 1951 to 1955 that there has been a 59% decline in admissions to the sick-list due to **antibiotic-reactions**. Penicillin was the cause of 97% of all reactions. The drop in reaction rates parallels the drop in issue-rates of injectable penicillin.

Far be it for this column to start an intramural argument, but we'd like to say a few words for **'CHLORPROMAZINE'** (which **DOES** work), recently condemned in this journal because it is a **PHENOTHIAZINE** (which, years ago, **DIDN'T** work). . . . Actually many drugs have been invented, derived, or synthesized; found to be of scanty use for certain conditions; and been put back on the shelf, only to be hauled down or rediscovered for another trial. . . . It is a far cry from the old anthelmintic to the new anti-tension, anti-nausea usage. It is probable that we haven't found the best drug yet, but we must have a better reason for condemning a drug than that it was described a long time ago.

To further prove that we read **ARIZONA MEDICINE**, we'd like to say a word in favor of compulsion. Another member of the Board doesn't like the rule which requires a member of a state

medical society to belong to the A.M.A. He hails a New York referendum which voted against it. . . . We don't like compulsion, but we like "free-riders" even less. Physicians in New York, or elsewhere, who want to see medicine organized and strong, and who want to partake of its benefits and protection, should be willing to pay for it. There is some element of compulsion in orderly family existence, in all forms of government, and in almost every phase of life. If the use of these powers is benign (as it seems to be), it would seem to be up to the individual to support the 'system.' A county medical society membership is not compulsory, but what happens if you don't join? What happens if you don't pay your taxes? I'd rather conform, and be glad they'll have me; then I can "voluntarily" try to get into the College of Physicians.

Have you noticed the absence of the Pfizer Co. **'SPECTRUM'** from the J.A.M.A.? We have missed it, since it was quotable as well as readable. It is a definite loss, because one really felt that he had to read it.

Dr. Norman Vincent Peal is a "doctor," but of Divinity. He is also a physician, in the broad sense of the word, since he does a great deal to heal the weary and heavy laden. . . . He describes a European doctor's term for those people with tension, high blood pressure, and psychosomatic disorders, — **"the manager's disease."** They find it in executives, or anyone with a managerial responsibility. People can even be called managers of themselves; when they fail to do so they are subject to manager's disease. . . . The treatment which Dr. Peale suggests is, naturally, religion. It is not a bad therapy for anyone to suggest.

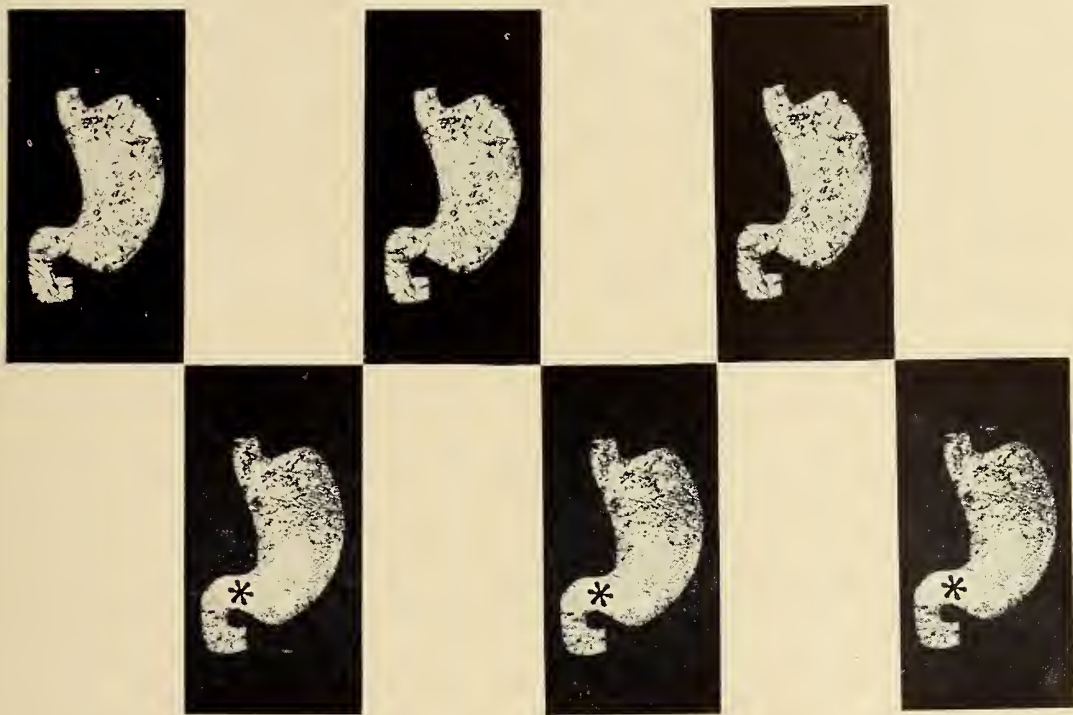
The search for new **'tranquillizing'** drugs continues to proceed, but a new name for their effect is of some interest. . . . The Ames Co. calls its drug a **"CALMATIVE,"** with the trade name of **'Nostyn.'**

The Eaton Labr. receive a plug from H. F. Flippin for their preparation **'Furadantin.'** It is a synthetic material; is not likely to meet resistance; and is useful for respiratory and urinary tract infections.

Lakeside Labr. has put out a drug for such colon disorders as include pain, cramps, bloating and diarrhea. It is an anti-cholinergic called **'Cantil.'**

All of these drugs, and a thousand others, will have to bear the test of time and comparison with similar drugs.

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SEARLE

Ventricular fibrillation occurs during surgery of the heart in a serious percentage of cases. The most common way to defibrillate has been the use of an electric stimulation. The chief disadvantage has been the burn which an arc produces in the tissue and in the heart. This can cause death or recurrences of the fibrillation. . . . It is now reported by Swan and Dortz of the University of Colorado that if an electrolyte-saturated pad is placed between the metal electrode and the heart, the contact is more perfect, no arc forms, and (in dogs) the damage and mortality are sharply reduced.

MIGRANE has been better treated than usual by a routine of J. G. Oatman of Pittsburgh. He says that the diagnosis of migraine headache is established when typical periodic hemicrania is associated with visual symptoms and nausea or vomiting. Certain personality types are more commonly afflicted with migranes than others. They include intellectual workers of the obsessive-compulsive makeup, having perfectionistic tendencies. Treatment is directed against vasodilation in the cerebral and cranial vascular bed, believed to be the cause of migraine headache. . . . Twenty-three out of a series of 24 patients with migraine headache responded to treatment with either ergot preparations or methylisooctenylamine. . . . The incidence of relief obtained from methylisooctenylamine or the ergot preparations was comparable. This relief was long-continued and complete in some very difficult cases. . . . In patients suffering from frequent attacks and attacks over a long period of time, methylisooctenylamine may be preferred because it is not cumulative in its constrictive action on the peripheral vessels and therefore does not involve the danger of gangrene.

A therapy for **TUBERCULOUS LYMPHADENITIS** has been suggested by Marquely, et al., of the Trousseau Hospital in Paris. If they only had 2 or 3 apiece it would be a fair-sized series, since he has five co-authors. . . . They use chemotherapy, which is not very effective in the glands, but also inject 10 mg. of hydrocortisone into each gland 2 or 3 times a week. The size of the gland, and the volume of aspirate before each injection, decrease in a few days, they say, and the lesions are 'cured' in 1 to 2 months. . . . This will not be easy to confirm, since "you don't hardly see these cases no more."

A Spanish group injects steroids intrathecally in cases of late or neglected **TB meningitis**. . . . Another French group uses **ACTH** or **cortisone** in TB with serious prognosis, especially when complicated by empyema, acute inflammatory disease, or disease with violent reactions to chemotherapy. They go cautiously, however.

The biographies of Princess Marie Louise of Britain, who passed away recently at the age of 84 yrs., mention that she was the first princess

to smoke in public, to fly in a plane, to live in an apartment, and to be a member of a women's club. . . . These notes are very interesting, but we would like to suggest a medical, and perhaps more laudable, set of accomplishments for a **MODERN PRINCESS**. — She was the second person to take 'supercillin' for an infection; she let another sicker child use the first dose. She worked regularly twice a week for the Red Cross. She helped found a woman's auxiliary for the County Hospital. She had a baby by the "natural method," and actually nursed it. She came out strongly for better hospitalization but for private medical care. She refused to deal with the representatives of any communist country. (Then, if she smoked, had a drink, or cussed, it would be nobody's business.)

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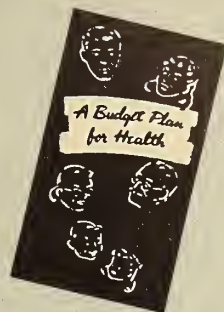
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THE BODY POLITIC

By Governor Howard Pyle
(Formerly Governor of Arizona)
Administrative Assistant to the President,
Whitehouse, Washington, D. C.

THE COMPLEXITY of government in these times is comparable to that of the human body, with which you are so familiar, that it seems appropriate to title my participation here this afternoon, "The Body Politic."

Broadly, of course, government is considered to be the executive, the legislative, and the judiciary. This is correct as far as it goes, but it no more tells the whole story than to say that the human body is bone, muscle and nerves. By the same token that the number of specialists among you identifies the extent to which the human body and its problems are not just bone, muscle and nerves, so does the expanded make-up of government today overwhelm the popular concepts of the body politic as the executive, the legislative, and the judiciary, only.

To these three standard dimensions must automatically be added a third known as individual rights as they relate to the person, his property, his freedom, his security, his right to justice and so on and on and on. So the body politic grows until every time you turn on a faucet in your house, politics is involved. History, from its beginning until now, is **past** politics, and politics is **present** history. Finally, out of the immensity of it all, there emerge certain forms and patterns. Perhaps a little background here would be helpful.

For 7,000 years, tyranny, conquest, militarism, lawlessness, mob-mindedness, riot, persecution, oppression, and rebellion were the words that described the panorama of unsuccessful efforts and experimental failures that characterized the rise of government and what we have since come to know as the body politic. Along the way, there were rays of light and hope appearing in Greece, Rome, Holland, Switzerland, England, and elsewhere. Still, no government was devised that could secure for its people any one of the great fundamental privileges so desired for the general welfare. Think of it, for 7,000 years, no government secured for its people religious freedom, civil liberty, freedom

of speech, freedom of the press, or security of individual rights, popular education, or universal franchise! This is rather startling, perhaps, but it is absolutely indisputable.

Then came the founding of the Republic of the United States of America, and, within a century, we had secured most of the fundamental privileges for which government is permanently organized. Basically, this has been the most nearly perfect experiment in people's government in the entire history of human beings. Today, we are its custodians, intelligently or otherwise, and challenging indeed are the decisions which we are being called on to condone or to condemn in our day and time.

The body politic, the Republic, U.S.A. 1956, is in our hands, and, believe me, gentlemen, the longer I work in the halls of government, the more I realize the great jeopardy in which many of our basic institutions find themselves as we move on from day to day.

I don't need to outline this to you. You have all been keenly interested in a very special way, both professionally and otherwise, in the proposals of recent years. In the areas in which you are particularly concerned, I wish I had time to expand on the trends in medical research as such, medical research in teaching facilities, health personnel, meeting the cost of medical care, strengthening the basic health service, sick surveys, and the expansion of medical care facilities. It is my understanding that Dr. Coggeshall, Dr. Scheele, and Secretary Folsom will be with you during the course of these next few days. Undoubtedly, they will be supplying you with a detailed account of the present situation in these areas, and therefore, with this understanding, I would like to touch on other areas that I think maybe you aren't so likely to have the time to look into.

I repeat government today is not as simple as it may look from where anyone of us may sit personally or professionally. It's bigger than big and oh so complex. There's Agriculture, Atomic Energy, the Budget, Civil Rights, Civil Service, Defense Mobilization, the Economy, Education, Federal Trade Activities, Foreign Economic Policy, Foreign Policy, the General Services Administration, Government in Business, the Health Programs of the Country, Highways, Housing, Interior, Internal Revenue, Labor, Military Pay and Benefits, Military Preparations, Military Reserves, Mutual Security,

Presented before the conference of presidents and other officers of state medical associations. Reproduced by permission of Gov. Howard Pyle.

the Post Office, Power Policy, Security, Social Security, Strengthening Career Service, Taxes, the United Nations, the USIA, and so on — I could enumerate dozens of others, but this would not add to your understanding more than to simply enlarge the picture. Therefore, I come to you today in the hope that you can be encouraged as representatives of one of the most intelligent blocks of our entire society to be more than casually interested and more than casually concerned with many of the other things that relate to your government and what you support with your taxes.

What is the role of government, the body politic? Let's reduce it to a few lines here and make it a little bit more easily understood: In cooperation with the Congress these days, we seek to discharge our responsibility by way of a series of related policies, and our particular interests fit inside the bracket of these points.

First, we have tried to remove direct controls over prices and wages, controls that had outlived their usefulness.

Secondly, in preserving an actively competitive business environment and assisting new and small businesses, we have, we believe, strengthened the health of the body politic generally.

Third, we have curtailed governmental activities that could be handled as well or better by private enterprise.

Fourth, we have restricted public expenditures and added to the country's defensive strength and its stock of public assets, especially highways, hospitals and educational facilities.

Fifth, we have lightened the burden of taxes imposed on individuals and businesses.

Sixth, we have extended the scope of our trade and investment with other nations of the free world.

Seventh, we have tempered the impact of unemployment, old age, illness, and blighted neighborhoods on people without impairing self-reliance.

Eighth, by extending the automatic working of our fiscal system we have improved the prospects for cushioning changes in income arising from changes in economic activity.

Ninth, we have attacked the fundamental causes of weakness in the farm situation.

Tenth, we have acted promptly and resolutely when either recessionary or inflationary in-

fluences in the general economy have become evident.

As reasonable and logical as these ten points of procedure are to most of us, there are decided differences of opinion on each of them. Therefore, it is a question of continuous give and take — reduced to a phrase: that which does not bend, breaks. On many of these fronts I have heard the President apply a similar line of reasoning which he draws from his vast military background. Reduced to an equally simple line, it's this: When I take a line to defend it, I take it where I know I can hold it.

Ladies and gentlemen, some of you have had experience in government affairs. You know something about the pressures that build up on philosophical points of difference. Those of you who have not had direct personal contact with it can't begin to know what these pressures are like when stimulated, as they are in many instances by the demagogue who sees in it the possibility of political favor. To retain a sense of balance, to give enough — not to break; to give enough — not to lose the point; yet not give so much as to destroy a safe and sane position — takes a tremendous amount of wisdom, understanding and patience, as well as many other attributes of nature that are not unusually found in the political arena.

In reporting these things to you, I do so because it is important that we understand each other better — you in the professions and us in government administration.

I think it would be fair to say that in no other comparable period in history have the persons of your profession been more alert to the problems that are involved in government than is the case today. I can assure you that these problems will become more and not less challenging. We need and welcome your participation in public affairs, but we urge that you not come with a largely negative point of view. Those with whom you will not agree will be arguing for things. Be prepared to do likewise or risk fatal failure. Be prepared to take the initiative with wiser and better plans. There's little percentage in continuously and forever coming from behind in areas where you know there is going to be a constant and continuing pressure as the years and the days go on.

May I illustrate?

I can understand, being of a conservative

mind, why you have been especially exercised about many of the things that have happened in Washington in recent months. Still in my own State of Arizona — and I speak of it respectfully because I love it dearly, but it is not beyond criticism — we have found it almost impossible, it seems, (perhaps I have not felt the impact of the influence of your profession) to inject into our program of state activities enough real enthusiasm for a better state health program. Many times, as I have looked at the budget of my state, I have found it extremely difficult to understand why public health has to be tenth, or eleventh, or twelfth, or thirteenth, or fourteenth down the list of appropriations. On top was always public welfare and in second place always, public roads, and so on. Far, far down the list was public health.

This is an area, ladies and gentlemen, where legislators need to be intelligently and aggressively guided by persons of your knowledge and experience. Otherwise, the demagogue moves into the situation — sees the possibility of fanning it into a real flame and does a spectacularly clever job of making a lot of people feel that only he cares what really happens to the people. Then you suddenly find yourself in trouble.

To further illustrate. . . . In state after state you will find our physical rehabilitation program crippling along under the sometimes less than enthusiastic management of totally unrelated departments. Nothing could be less realistic or more costly. Our responsibilities for physical rehabilitation should all be so directed as to take the earliest and most intelligent possible advantage of the eagerness of the disabled to be rehabilitated. Most of these people want to be able to make their own way. All they need is well informed help and encouragement to make them active, useful citizens instead of wards of our state? What have you or the Associations with which you are identified done to provide successful leadership in this direction?

I mention these things because I would like to see the profession you represent move into areas of this kind and press vigorously for the best possible results consistent with our ability to pay and our universal desire to avoid unnecessary regimentation. This I urge in contrast to the tactic of surging in from right field or from left field when the fat is in the fire and any move you make takes on the aspect of

being a move in opposition to rather than for something.

I have a wonderful brother who is a school-teacher. We have not always agreed on public school matters. For example I have always been a rabid advocate of what I call some pretty down-to-earth approaches to the public school financing problem. Yet I have found that a lot of the solutions are not easy to explain, even to a most patient and interested brother.

I remember conducting a political campaign built around a somewhat detailed explanation of how our state could approach the school financing problem without leaning on the Federal Government; without placing an unfair *ad valorem* tax burden on certain categories of property; without a lot of the hazardous concerns that had kept our people in some doubt about their future in relation to school financing. It was rather a complicated formula, but it was sound and the proudest of two years of very diligent study and earnest, honest, forthright progressive thinking. My opponent, a somewhat typical advocate of another sort came along behind me with a line you'll find very familiar — "Why, it is simple; just give them more money."

The result, the opposition was elected — the tax rate soared immediately and there is still no solid objective solution to public school financing in Arizona.

It's all called "politics". We don't like to get into it, but unless we do others will find easy ways to so complicate our lives and our way of life that we'll wonder why we ever hesitated to be active helpers along the way. Not just objectors, but helpers in the most useful sense of the word. Government is undoubtedly one of the most complicated of all the things we administer in our day and time, and the pros in the business, whose political ambitions are often tied to the things they can fan into an issue are as numerous as the leaves of the trees. Aside from our particular responsibilities in the areas where we are specialists we have the broader obligation of custodial concern for the so-called conservative point of view in government. President Eisenhower has put it into these words — "In dealing with monetary affairs, be conservative; where human beings are concerned, be liberal."

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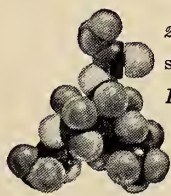
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May I make one thing crystal clear to you in conclusion?

I do not come to you as a partisan in the strictly partisan sense. We must not be intolerant of the sincerely partisan views of those who differ with us. On the other hand, we owe our children and those who have so ably brought this great country thus far our very best planning for the future. The "body politic" must grow in strength and character. In this connection it's worthwhile to take a sober look at the record of the past — the historical cycle of other peoples in other times.

The rise has been —

from bondage to spiritual faith —
from spiritual faith to courage —
from freedom to abundance —

Then comes the warning —

from abundance to selfishness —
from selfishness to apathy —
from apathy to dependency and
from dependency back to bondage once
more —

Where are we in relation to this cycle?

Remember, today, the health of the "body politic" is in your hands, too. Thank you.

IT CAN'T HAPPEN HERE?

By L. D. Sprague, M.D.

"**B**BRITISH Doctors Plan Boycott" — this recent headline excerpt from an AP dispatch in a Tucson newspaper, January 3, 1957, arouses interest and provokes thought. The average British doctor as some of you know, has an annual income of less than \$7,000 under the British national health fee schedule. Their complaint, "we are suffering from an anemia of the pocketbook". Now unless their demands for an increase in fees is met they may boycott the vast system of socialized medicine under which most Britons receive medical treatment.

One wonders what the American medical pro-

fession might do under similar circumstances. At first glance the average reaction would probably be — it can't happen here. The American medical profession has from time to time fought various schemes which embrace socialization of medicine. At a time when a large number of physicians were serving in the Armed Forces, 1943, the government made its most comprehensive bid for the socialization of medicine in the first Wagner-Murray-Dingell bills. Although federal planners had hoped to accomplish their scheme of socialization while organized medicine was in a weakened condition, physician effort rose to the occasion and the bill was defeated because of their immediate and violent opposition. This was hailed as a great victory for the forces of the free practice of medicine and for the most part physicians retreated into their isolationist shells and forgot the whole affair. One organization born of the need for representation of the medical profession exclusively on a socio-economic level, the American Association of Physicians and Surgeons had continued to battle through the years to maintain the traditional physician-patient relationship, their freedom of action and the preservation of quality medical care. They can probably be credited with a more dynamic action and dedicated fight than any other organized group in American medicine in resisting government encroachment in the field of medical practice.

Each legislative session, since the defeat of the Murray-Wagner-Dingell bill has seen numerous and for the most part singularly successful attempts to present and adopt into law schemes which in effect socialize medicine piecemeal. The year 1950 marked the first sweeping victory with the enactment of the Social Security Act Amendments of 1950. Physicians, for the most part, opposed the bill but did so weakly and too late for effective action. These amendments did not immediately nationalize medicine but they did draw the medical profession into the Government's magnetic field. The bill provided for Federal funds for money payments, medical care, and remedial care for needy individuals 18 years of age or older who were permanently and totally disabled. Federal planners had finally discovered the back door to socialization of medicine. Like the majority of health legislation proposals, the measure appealed to public sympathy and lured physicians with the offer of payments for disabled patients who had been

erstwhile charity cases. What physicians failed to recognize was that in accepting Federal payments they had to perforce accept Federal control. It is inevitable that "he who foots the bill has the right to call the tune" — the Supreme Court has so ruled.

In 1952, 1954 and 1955 further amendments to the Social Security Act gained for the socialist minded Federal planners further important inroads to the total socialization of the practice of medicine in the United States. The year 1956 was no exception with the enactment of the Social Security "insurance" program for cash payments to medically certified disabled persons covered by Social Security — HR 7225.

The most recent attack on American medicine for the purpose of nationalizing the profession became effective December 7, 1956. Medicare is, regardless of how one attempts to disguise it, socialized medicine. As usual its provisions have mass public humanitarian appeal, physician acceptance is lured by statements that "it will not be necessary to draft physicians to care for dependents in military establishments, as heretofore", and physician's fees are at present not based on capitation but negotiated with federal agencies. Dependents of the "uniformed services" coming under the provisions of the program, some 800,000 individuals, and the physicians who serve them, participate in socialized medicine because the services are paid for by the federal government and realistically, the entire program is under control of the federal government. The final word and authority is the prerogative of government since it provides the money to finance the program. Remember also, government has nothing to give except that which it first must take from you in the form of taxes.

Let us now project the next logical step, from the federal planners' viewpoint. Who can say when they may choose to provide for the health needs of another group of citizens? Congress could presumably extend Medicare coverage now to include postal employees. How about the 2,400,000 civil service employees or the millions of people now receiving Social Security benefits? A recent AAPS "News Letter", asks this pertinent question — "Since Medicare is socialized medicine and since government controlled medical care inevitably brings about a deterioration of medical service (and we might add increased costs to the taxpayer) to the

detriment of both the patient and doctor, we are prompted to ask: When and under what provocation will we physicians debate, deny or oppose in support of the ethics and ideals of our profession, for the protection and benefit of our patients? Each of us must find the answer in his own conscience. . . . And soon, because time is running out for the continuation of qualitative medical care and for medical freedom for physicians and their patients.

Will the time soon arrive when the headline quoted at the beginning reads: "American Doctors Plan Boycott"?

**Dues Paid By Active Members of
County Medical Societies In Arizona
1957**

By Wallace A. Reed, M.D.

| County Society | County Dues | AMA | State | Total |
|----------------|---------------------|---------|---------|----------|
| Apache | \$15.00 | \$25.00 | \$70.00 | \$110.00 |
| Cochise | (No reply received) | | | |
| Coconino | (No reply received) | | | |
| Gila | 30.00 | 25.00 | 70.00 | 125.00 |
| Graham | None | 25.00 | 70.00 | 95.00 |
| Greenlee | 25.00 | 25.00 | 70.00 | 120.00 |
| Maricopa* | 60.00 | 25.00 | 70.00 | 155.00 |
| Mohave | (No County Society) | | | |
| Navajo* | None | 25.00 | 70.00 | 95.00 |
| Pima | 35.00 | 25.00 | 70.00 | 130.00 |
| Pinal | 15.00 | 25.00 | 70.00 | 110.00 |
| Santa Cruz* | 2.50 | 25.00 | 70.00 | 97.50 |
| Yavapai | 10.00 | 25.00 | 70.00 | 105.00 |
| Yuma | 10.00 | 25.00 | 70.00 | 105.00 |

*In MARICOPA County, members must pay an additional \$15.00 per year for 10 years. This is an assessment for the Library and Building Fund. If paid in advance, a reduction of \$1.00 per year is allowed.

*In NAVAJO County, funds are raised when needed by "special assessment." These usually amount to "\$15.00 q. 3-4 years."

*In SANTA CRUZ County, "Practically all of our members feel our annual dues are entirely too high and that operating expenses of the State Association are likewise too high."

| State Medical Society Dues | | | | | | | |
|----------------------------|------|-------|------|-------|-------|--------|------|
| Ala. | \$20 | Kan. | \$40 | Nev. | \$100 | S.C. | \$20 |
| Ariz. | 60 | Ky. | 35 | N.H. | 40 | S.D. | 75 |
| Ark. | 25 | La. | 50 | N.J. | 30 | Tenn. | 25 |
| Calif. | 50 | Me. | 60 | N.M. | 70 | Tex. | 50 |
| Colo. | 50 | Md. | 30* | N.Y. | 25 | Utah | 50 |
| Conn. | 28 | Mass. | 35 | N.C. | 40 | Vt. | 35 |
| Del. | 50 | Mich. | 45 | N.D. | 75 | Va. | 25 |
| Fla. | 40 | Minn. | 40 | Ohio | 20 | Wash. | 35 |
| Ga. | 25 | Miss. | 35 | Okla. | 42 | W. Va. | 25 |
| Idaho | 40 | Mo. | 25 | Ore. | 40 | Wis. | 65 |
| Ill. | 40 | Mont. | 54 | Pa. | 40 | Wyo. | 25 |
| Ind. | 30 | Neb. | 35 | R.I. | 50 | D.C. | 50 |
| Iowa | 60 | | | | | | |

*For Baltimore members, \$50. Source: Michigan State Medical Society survey.

BRADLEY REPORT

By Elmer E. Yeoman, M.D.

IN JANUARY of 1955, there was created by the Executive Order of the President of the United States the President's Commission on Veteran's Pensions. The instruction to this group was to make a comprehensive survey and appraisal of the structure, scope and administration of veterans' compensation and pension laws and those providing related non-medical benefits. Especially, the Commission was to recommend policies which, in its judgment, would guide the granting of such benefits in the future.

Three points were to be given particular attention. 1. Basic changes in our society affecting the role of these benefits. 2. Conditions under which benefits should be provided to different categories of veterans. 3. Relationship of veterans' benefits to each other, to military benefits and to social security and other benefits granted without regard to veteran status. This Committee was a group of outstanding individuals under the chairmanship of General Omar N. Bradley. The medical interest in this report lies primarily in the development of the basic philosophy for eligibility of veterans' benefit programs. It specifically was not to investigate the medical program of the Veterans Administration.

A few brief abstracts that are of general interest are presented out of report that is in excess of 400 papers of printed material. 1. Our present structure of veterans' programs is not a system. It is an accretion of laws based largely on precedents built up over 150 years of piecemeal development. The public at large has taken little interest and the laws have been enacted in response to minority pressure. . . . There is, at present, no clear national philosophy of veterans' benefits. 2. It is pointed out that the veteran as a whole is better off economically than a non-veteran in the same age group. Veterans and their families constitute 45% of the population at the present time. It then becomes immediately apparent that the major load in supporting these veteran benefit programs is coming from the veteran himself.

As guide lines for the future the following points were made by the Commission:

a. Veterans' benefits are a means of equalizing

significant sacrifices that result directly from wartime military service.

b. Military service in time of war or peace is an obligation of citizenship and should not be considered inherently a basis for future government benefits. . . . The performance of the duties of citizenship cannot be expected to be painless or free from sacrifice.

c. The service-connected needs of ex-service-men should be accorded the highest priority among the special programs for veterans. . . . The rehabilitation of disabled veterans and their reintegration into useful economic and social life should be our primary objective. . . . Readjustment benefits to help newly discharged veterans overcome service handicaps have proved their worth when these programs have been properly devised and used. . . . Education and training and related readjustment benefits are now recognized as the best way of discharging the Government's obligation to the nondisabled. . . . Veterans have many needs which are not connected in any way with their military service. In the past veterans' pensions pioneered in the field of social welfare, but today our society has developed comprehensive means for meeting most of these needs. Long strides are being made in closing remaining gaps, and the non-service connected benefits accordingly should assume a 'reserve-line' status.

d. We should have a positive policy toward veterans' programs.

e. Our national policy toward veterans should be developed through widespread and realistic public discussion based on complete and continuing factual information about the relative economic and social status of veterans in our society.

f. Veterans with equal handicaps should have equal treatment. . . . Fair and equal treatment of all veterans, disabled and non-disabled, according to their service-connected needs, should be the guiding principle in all our programs.

g. The benefits paid to veterans with similar needs must in most programs be uniform throughout the country. Geographic or industrial variations . . . however, must be given weight.

h. Each generation must be forward-looking and willing to bear its own responsibility. . . . In veterans' programs particularly the initial cost of a program is not a good indicator of its ultimate growth or size.

i. We should keep the whole range of our

national needs in perspective. . . . It would be dangerous to over-emphasize veterans' non-service connected benefit programs at the expense of essential general programs. . . . What best serves the Nation in the long run will be in the best interest of the veterans.

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E. C. Mason, Secretary
ARIZONA STATE BOARD OF
PHARMACY

COMSTOCK CHILDREN'S HOSPITAL

COMSTOCK Children's Hospital, located at 1034 East Adams Street, Tucson, Arizona, provides hospital care for children suffering from tuberculosis and rheumatic fever, and for crippled children convalescing from orthopedic surgery or requiring long term therapy. Founded in 1920, it originally provided care for persons of all ages suffering from tuberculosis. With

the opening of the Arizona State Sanatorium at Tempe in 1936, Comstock Hospital was relieved of its adult patients, and was reorganized as a children's hospital. Since 1939, facilities have been available for the care of crippled children. Comstock Hospital is, of course, duly licensed by the State, and is also a member of the American Hospital Association. It is, in fact, the only children's hospital in Arizona.

The original buildings were erected in 1920 by way of funds raised in a campaign directed by Harold Bell Wright. In 1939, an entirely new wing was added for the care of crippled children. In 1954, a twenty-four bed wing was added, primarily for the care of infants with tuberculosis; and now, in 1956, a Ford Foundation grant has made it possible to remodel the original buildings, and modernize the hospital in every particular.

Facilities are available for the care of forty-six children and during the last several years, the average daily census has been about forty.

Comstock has been used extensively for the care of children eligible for the benefits of the Tuberculosis Control Act and those being cared for by the Crippled Children's Division of the State Welfare Department. Patients of individual physicians may be admitted to Comstock Hospital, aside entirely from any public program, and any physician who is a member



Comstock Children's Hospital

⁹In an effort to more satisfactorily acquaint the physicians of Arizona with the medical facilities of the State, it is hoped

that periodically articles will be published to describe the auxiliary facilities.

of the Arizona Medical Association may place a child in Comstock and continue to care for it, as in any other hospital. Although the regular cost is approximately \$7.00 a day, arrangements can be made for smaller payments depending upon the financial condition of the child's family and in many cases children are admitted without payment.

Unless an admitting physician, in cases of tuberculosis, treats his patient in the hospital, the patient will be cared for by a panel of physicians headed by Dr. O. J. Farness and composed of the men actively engaged in thoracic medicine, surgery and roentgenology in Tucson. Although these men donate their services and receive no pay, every member of the panel has been active and interested, and regular in attendance at meetings and conferences. The panel serves on the wards on a rotational basis and once every two months the entire panel meets at the hospital to review every case in the institution. Other physicians may work with the panel on a consultation basis without extra charge to the patient but they need not do so. In like manner members of the Pediatrics Society donate their services to provide regular care on a rotational basis; they, too, meet periodically at the hospital. Regarding orthopedic practice, however, all the children that have been admitted to the hospital so far have been patients of admitting physicians who have continued to treat them or have been admitted by way of the Crippled Children's program, the Indian Bureau or the Public Health Service.

Comstock Children's Hospital is actually operated by Community Service, Inc., a non-profit agency which also operates Ryland Home for Men. Community Service, Inc. is one of the original members of the Tucson Community Chest and to the extent that its operations are not financed by the public programs, insurance payments and patients' charges, they are paid for by contributions and by funds raised in the annual United Campaign.

The staff at the hospital consists of a director, four registered and sixteen practical nurses along with the necessary kitchen and house-keeping personnel. A full time teacher has been assigned to Comstock Children's Hospital by the Tucson Public School System, and it has been the experience of the hospital that children who are hospitalized for many months return

to school ahead of the classes they had to leave. With the assistance of the staff and volunteer help from individuals and organizations, occupational therapy and recreational programs have been developed to assist the youngsters in maintaining happy, normal childhood activities.

The present director, Aileen M. Taylor, has been connected with the hospital for seventeen years and is fully familiar with the many problems of such an institution — medical, social, financial — and will be able to answer fully any inquiries concerning any details of any kind. She will also be happy to show any physician through the hospital at any time. The human aspect of this institution cannot be described — it must be seen: the Board of Directors invites inspection.

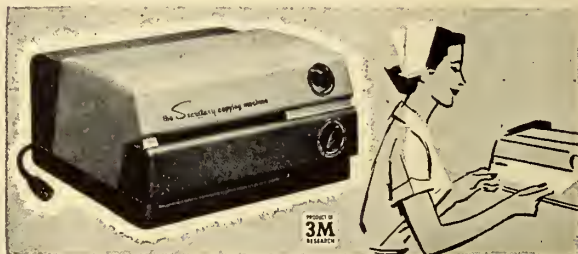
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Organization PAGE

CIVICS

By Norman A. Ross, M.D.

Dear Doctor Ross:

In a recent conversation with Dr. Robert S. Myers, Assistant Director of the American College of Surgeons, he indicated that you were interested in information regarding the establishment of a two year medical school.

I am enclosing a reprint on "Essentials of an Acceptable Medical School" which was last issued by this Council in 1951. This material is currently being revised and in its new form will represent the coordinated thinking of this Council and the Executive Council of the Association of American Medical Colleges. It has already been ratified by the two Councils and will be presented to the House of Delegates of the American Medical Association for their consideration with the recommendation for adoption in June.

Dr. Myers indicated that at the present time some of you are interested in the possibility of developing a two year school of basic medical science in Arizona.

You are aware as I am sure are your professional colleagues, that the establishment of a medical school today is an undertaking that merits considerable thought and planning. A full four year program is quite expensive but in spite of this a number of new schools are being developed. It is much more difficult to cut medicine into segments such as "preclinical" or "basic medical science" and "clinical" than it was some years ago. During the past several years there has been much more basic clinical indoctrination in the second year than there used to be, so that the sharp dividing line between these two years of basic medical sciences and the two clinical years no longer exists in most institutions.

Currently such institutions as the University of Missouri, the University of Mississippi and West Virginia University which have conducted two year basic medical science programs in the past are being converted into full four year programs. Missouri and Mississippi will graduate their first classes this next June and

West Virginia University will probably graduate its first class about 1959 or 1960.

This leaves only three schools of basic medical science or "two year medical schools" in the United States. These are the institutions in North and South Dakota and the two year program at Dartmouth. These schools have all adopted their programs so that they are able to introduce some of the clinical correlation in their currently existing two year basic medical science programs.

This Council and the Executive Council of the Association of American Medical Colleges are glad to serve in an advisory capacity in any way we can in assisting institutions considering the development of a program in medical education, regardless of whether it is a two year program in basic medical sciences or a full fledged four year program.

There is no question but that the increasing population of this country will necessitate augmented educational facilities in this important field. It is necessary that all of us do everything we can to stimulate sound developments that will make it possible for us to maintain the basic standards which we believe to be so important in modern medical education, if it is to effectively serve the public.

If we can be of further service please feel free to communicate with this office.

Very sincerely yours,
Edward L. Turner, M.D., Secretary
Council on Medical Education
and Hospitals
American Medical Association

PSYCHOSOMATIC GYNECOLOGY: Including Problems of Obstetrical Care, by W. S. Kroeger, M.D., and S. C. Freed, M.D. 503 pages. (1956) Free Press. \$8.

This text is a reprint of the 1951 (Saunders) edition. Psychologic factors in obstetrics in foetal relationship, pregnancy, labor, abortion, eclampsia, and postnatal care are discussed. Psychogenic problems of the entire gynecologic field are considered in detail. The factual approach makes this a valuable aid to all physicians.

Stacey's Medical Books, San Francisco

**REPORT ON ACTIONS OF THE HOUSE OF DELEGATES
AMERICAN MEDICAL ASSOCIATION
TENTH CLINICAL MEETING
NOV. 27-30, 1956
SEATTLE, WASHINGTON**

By George F. Lull, M.D.

Secretary-General Manager

American Medical Association

MEDICAL ethics, veterans' medical care, radioactive isotopes, continuance of the A.M.A. interim session, hospitalization for patients with alcoholism and a report of the Committee on Medical Practices were among the wide variety of subjects acted upon by the House of Delegates at the American Medical Association's Tenth Clinical Meeting held Nov. 27-30 in Seattle.

Dr. Edward M. Gans of Harlowton, Montana, was announced at the opening session Tuesday as the 1956 General Practitioner of the Year. The annual award, carrying with it a gold medal and a citation is presented to a family doctor selected by a special committee of the Board of Trustees for outstanding community service. Dr. Gans, who is 80 years old, has practiced medicine for 51 years and has been in the Harlowton area for the past 44 years.

Strongly condemning government intervention in medicine, Dr. Dwight H. Murray of Napa, Calif., A.M.A. President, told the opening session that "the medical profession, along with business and industry, is caught between those who desire to promote sound government programs and those who desire even more intensely to perpetuate party politics. Unfortunately, in recent years a benevolent federal government appears more attractive to the voting public than the preservation of individual freedoms. Medicine must do its utmost to reverse this trend."

MEDICAL ETHICS

Subject of greatest interest at Seattle was the proposed, ten-section revision of the Principles of Medical Ethics originally submitted at the June, 1956, Annual Meeting in Chicago, where final action was deferred until the Seattle session. The proposed short version of the Principles was resubmitted this week, with some changes based on suggestions received since last June by the Council on Constitution and By-Laws. The House of Delegates, however, decided to refer the matter back to the

Council on Constitution and By-Laws for further study and consideration. The reference committee report adopted by the House included the following statements:

"Careful consideration was given to the Preamble and the ten sections of the proposed Principles. The Preamble and seven of the ten sections appear to be acceptable in their present form.

"Sections 6 and 7 were not acceptable as presented either to the group which appeared at the hearing or to your reference committee.

"Out of the general discussion the reference committee received the crystallized opinion that at least four areas needed more specific attention in Sections 6 and 7. These are:

- "(1) Division of fees;
- "(2) The dispensing of drugs and appliances;
- "(3) The corporate practice of medicine;
- "(4) Greater emphasis concerning the relationship between physicians and patients.

"In addition, the reference committee felt that the wording in Section 10 could be improved if amended to read as follows:

"The responsibilities of the physician extend not only to the individual but also to society and deserve his interest and participation in activities which have as their objective the improvement of the health and welfare of the individual and the community."

"In view of the above your reference committee believes that the proposed Principles of Medical Ethics should be referred back to the Council on Constitution and By-Laws for further study and consideration of the above stated principles.

"In the short space of time at our disposal and in view of the importance of the subject, your reference committee did not deem it wise to attempt to properly phrase these concepts.

"We would also recommend that if possible this study be completed at least six weeks prior to the June session and that the new version be published in THE JOURNAL in order that all interested physicians might have

an opportunity to comment thereon."

VETERANS' MEDICAL CARE

The House revised A.M.A. policy on veterans' medical care by endorsing in principle the following paragraph suggested by the Council on Medical Service:

"With respect to the provision of medical care and hospitalization benefits for veterans in Veterans Administration and other federal hospitals that new legislation be enacted limiting such care to veterans with peacetime or wartime service whose disabilities or diseases are service-incurred or aggravated."

This action eliminates the temporary exceptions which were made in the June, 1953, policy regarding wartime veterans who are unable to defray the expenses of necessary hospitalization for non-service-connected cases of tuberculosis or psychiatric or neurological disorders. In making the policy change, the House approved this supplementary statement:

"We recognize the laws and administrative extensions of the law that are now in operation. We feel that under the circumstances it will be to the best interests of the public in general, and veterans in particular, if medical societies, county and state as well as national, develop committees to assist in guaranteeing VA hospital admission to service-connected cases. While the present law exists, we should help assure that veterans whose illness constitutes economic disaster will not be displaced by those suffering short-term remediable ills which, at the worst, constitute financial inconvenience."

In another action concerning veterans, the House passed two resolutions condemning as unlawful the practice of Veterans Administration hospitals which admit patients who are covered by workmen's compensation insurance or by private health insurance and which render bills for the cost of their care. Both resolutions requested the A.M.A. to take action to bring about a discontinuance of such practices by VA hospitals, and one of them instructed the Association Secretary to obtain from each state testimony or records of each known case that violates VA Reg. 6047-DI.

RADIOACTIVE ISOTOPES

The House rescinded the June, 1951, action, which limited the hospital use of radium and radioactive isotopes to board-certified radiologists, by approving a new policy statement

which says:

"(1) In any hospital in which a patient is to receive radium or the products of radium or artificially produced isotopes, there should be a duly appointed Committee on Radium and Artificially Produced Radioisotopes of the hospital professional staff. This committee should include but not necessarily be limited to, the following qualified physicians: a radiologist, a surgeon, an internist, a gynecologist, a urologist and a pathologist. This committee should have available such competent consultation of other physicians and scientific personnel as may be required by it. Where this is not practicable, the hospital staff should consult the nearest Committee on Radium and Artificially Produced Radioisotopes.

"(2) In any hospital, the use of radium or its products and artificially produced radioactive isotopes for diagnostic or therapeutic purposes shall be restricted to qualified physicians so judged by the Committee on Radium and Artificially Produced Radioisotopes of the professional staff to be adequately trained and competent in their particular use.

"(3) It is recommended that procurement, storage, dosimetry control and inventory of all radioactive isotopes for the use of the hospital staff and radiological safety control be centralized, and, where administratively possible, centralization be located in the Department of Radiology.

"(4) It is recommended that the Board of Trustees assign to the appropriate council or committee the continuous study of the problems of radiological safety control in the use of radium and its products and artificially produced radioactive isotopes for diagnostic or therapeutic purposes."

CLINICAL MEETINGS

Rejecting a resolution which recommended discontinuance of the interim sessions or clinical meetings, the House adopted a reference committee report which said:

"We believe that the interim sessions should be continued because of the public relations value of these meetings to the Association and the educational value to physicians and the general public in the various geographical areas involved.

"It is the suggestion of the reference committee that maximum attention be given to

these potential benefits in selecting a city for the interim meeting.

"It is our further recommendation that the Board of Trustees consider the advisability of holding an Interim Meeting of the House of Delegates in Chicago each November or December and an Interim Scientific Session in November or December of each year in different parts of the United States. The reference committee suggests that the views of the Board of Trustees in this regard be reported to the House of Delegates next June."

HOSPITALIZATION FOR ALCOHOLICS

To implement educational approaches to the problem of alcoholism, the House approved a statement submitted through the Board of Trustees by the Council on Mental Health and its Committee on Alcoholism. The House also recommended that the statement be brought to the attention of the Council on Medical Education and Hospitals, the Joint Commission on Accreditation of Hospitals and the American Hospital Association. It includes the following:

"The Council on Mental Health urges hospital administrators and the staffs of hospitals to look upon alcoholism as a medical problem and to admit patients who are alcoholics to their hospitals for treatment, such admission to be made after due examination, investigation and consideration of the individual patient. Chronic alcoholism should not be considered as an illness which bars admission to a hospital, but rather as qualification for admission when the patient requests such admission and is cooperative, and the attending physician's opinion and that of hospital personnel should be considered. The chronic alcoholic in an acute phase can be, and often is, a medical emergency."

COMMITTEE ON MEDICAL PRACTICES

In approving a progress report of the Committee on Medical Practices, the House amended one of its directives to read as follows in order to remove any legal objections:

"The A.M.A. representatives on the Joint Commission on Accreditation of Hospitals be instructed to stimulate action by that body leading to the warning, provisional accreditation, or removal of accreditation of community or general hospitals which exclude or arbitrarily restrict hospital privileges for generalists as a class regardless of their individual professional competence where such policies adversely affect

the quality of patient care rendered. Any action taken should be only after appeal to the Commission by the county medical society concerned."

The House also approved a recommendation by the Committee on Medical Practices that a study group be formed to consider the best background preparations for general practice, and it urged that such action be implemented as soon as practicable.

MISCELLANEOUS ACTIONS

Among many other actions on a wide variety of subjects, the House of Delegates also:

Urged the widest possible publication and distribution of Dr. Murray's **PRESIDENTIAL ADDRESS** at the opening session;

Pledged the full support of the Association's initiative and energy to President Eisenhower's **PEOPLE-TO-PEOPLE PROGRAM** as a means of promoting understanding, peace and progress;

Directed the Board of Trustees to continue its investigation of the practicability of developing a **STATEMENT OF A.M.A. POLICIES** and to arrange for the periodic publication of revisions of such a policy statement;

Commended the objectives of the American Association of **MEDICAL ASSISTANTS** and its sincere desire to work closely with the medical profession in improving medical service and medical public relations;

Noted with pride the good work being done by the 74,348 members of the **WOMEN'S AUXILIARY**, as reported to the House by Mrs. Robert Flanders, President;

Directed the Councils on Pharmacy and Chemistry and on Foods and Nutrition to conduct a joint study of all presently available information concerning the **FLUORIDATION OF PUBLIC WATER SUPPLIES** and to present a documented report of findings and recommendations at the December, 1957, meeting;

Urged all physicians to participate actively in the formulation of medical policy for **PREPAID MEDICAL CARE PLANS** which are under physician direction or sponsorship;

Changed the By-laws to extend **SERVICE MEMBERSHIP** to reserve officers on extended active duty with the defense forces and the **OF MEMBERSHIP** so that an active or **as-U. S. Public Health Service**;

Changed the By-laws relating to **TRANSFER** sociate member of the Association who moves

his practice to another jurisdiction may continue his A.M.A. membership by applying for membership in the constituent association in his new jurisdiction, subject to a two-year limit on approval of his application;

Changed the By-laws so that the election of officers may take place at any time on the fourth day of the annual session, instead of being restricted to the afternoon of that day;

Passed a resolution calling for the American Medical Association to join with the American Hospital Association and the American Institute of Architects in their proposed STUDY OF HOSPITAL DESIGN AND CONSTRUCTION;

Approved the principle of a voluntary reduction in the self-assigned QUOTA OF INTERNS as printed in the 1956 handbook of the National Intern Matching Program, and

Instructed the Board of Trustees to accentuate cooperation between the American Medical Association and the American Bar Association to the end that a bill of the JENKINS-KEOGH type be enacted at the next session of Congress.

OPENING SESSION

At the Tuesday opening session Dr. Murray, on behalf of the American Medical Association, presented a special citation to Ciba Pharmaceutical Products, Inc., for "the service it has performed to the medical profession and to the nation through its weekly television series, 'Medical Horizons'." At the same session the American Medical Association and four of its constituent societies — California, Arizona, Utah and New Jersey — contributed nearly \$300,000 to the American Medical Education Foundation for aid to the nation's medical schools. The A.M.A. announced another gift of \$125,000, bringing this year's total contribution to \$343,000. The amounts presented by the four states were: California, \$132,981; New Jersey, \$25,000; Utah, \$11,870, and Arizona, \$3,695.

COUNCIL MEETING

By Walter T. Hileman, M.D.

COUNCIL of the Arizona Medical Association at its meeting of November 18, 1956 at Tucson, deliberated between 11:00 a.m. and 4:40 p.m. on the following, and other matters:

1. A preliminary report was made on a new bill to be proposed to the legislature regarding mental commitment procedures.

2. A contribution to the AMEF in the amount

of \$5.00 per active member as of January 1, 1956 passed.

3. The Washington negotiations on Medicare were reported in detail. Council commended the Committee and directed that letters of appreciation be sent to Mr. Bud Jacobs, the association's attorney, and Mr. Joseph Stetler, the attorney for the American Medical Association for their activities and great help in negotiating this contract.

4. It was reported that Blue Shield has contacted with Stanford Research for a survey of operation and future policies of Blue Shield in Arizona.

5. The Industrial Relations Committee chairman, Dr. Beaton, reported on plans for improving the practice in consultations and planned revision of the I.C.A. fee schedule, the latter following the lines of the California Relative Values Schedule.

6. The report of recent survey in regards to a State Medical School and availability of instructors was submitted. There are 180 members who have taught in Medical Schools and 303 members replied that they were interested in teaching, should a Medical School be established in the state.

7. The Public Relations board reported the desirability of the state association participating, when desired, in labor-management problems in setting up health insurance programs.

8. The Coconino County Society invited the Association to hold its 1958 convention in Flagstaff. This was referred to the House of Delegates for action at the annual meeting.

9. Planned efforts for nomination of Dr. Hamer for vice president of the American Medical Association were carried forward.

After other routine matters had been handled, Council adjourned.

LETTERS TO THE EDITOR

January 24, 1957

Editor, Arizona Medicine
720 North Country Club Road
Tucson, Arizona

Dear Sir:

IN ARIZONA Medicine for December, 1956, a guest editorial appeared entitled "Phenothiazine" by Robert J. Antos, M.D. In that editorial several factual errors and misconceptions occur. In dis-

cussing phenothiazine (thiodiphenylamine) Dr. Antos states that no mention of this drug can be found, as in the sentence "In the latest G. and G. nothing." I assume that this is a reference to the superb text of Drs. Goodman and Gilman, "The Pharmacological Basis of Therapeutics." If Dr. Antos is sufficiently familiar with these authors to refer to them in a scientific publication by initials only, one would think that this familiarity would extend to their actual work. On page 1148 of the second edition of this book will be found a succinct and authoritative discussion of phenothiazine.

The editorial's thesis seems to be that structural alterations in a parent compound will result in a drug that is just as toxic as the original. It is well known that in many instances the slightest change in the molecular structure of a compound will result in a totally different drug. For example, the simple substitution of an allyl radical for a methyl radical in the highly complex molecular structure of morphine results in a drug that is a true pharmacologic antagonist of morphine. Salicylic acid is quite unsatisfactory for systemic use, yet by acetylation a compound is produced which is a most useful and widely exhibited drug. Numerous other examples could be cited.

The modification of the phenothiazine nucleus by the addition of side chains of varying degrees of complexity produces drugs having no significant relationship to the properties of phenothiazine. Admittedly, promethazine, promazine and chlorpromazine may have undesirable side reactions. Many of these are simply an extension of the pharmacologic actions of the drugs when given in prolonged or high dosage, or to susceptible individuals. The more serious evidences of toxicity during long term therapy may be detected by periodic clinical and laboratory observations which should be well known to those prescribing these drugs.

The chief toxic effect of phenothiazine is directly on mature erythrocytes to the point of producing hemolytic anemia. This is not true of its derivatives under discussion. That they are capable of causing true toxicity is not denied. This is true of any drug with a satisfactory index of therapeutic activity. To condemn them as highly dangerous drugs on the basis of their structural formulas is unwarranted.

Very truly yours,
C. Clark Leydic, Jr., M.D.

WHY BLUE SHIELD MUST KEEP ON GROWING

By Robert Barfoot, M.D.

EVER SINCE the birth of the "Blues," the big news has been their astounding rate of growth. Blue Cross and Blue Shield have "hit the jackpot" in public acceptance, the former now well past the 50 million mark, and the latter expected to reach 40 million by the end of 1957.

Occasionally one hears the suggestion that Blue Shield attempt to "stabilize" its enrollment, and relax its efforts to cover an ever larger cross section of the population. But the demand for prepaid medical care is now almost universal; and those who have it are asking for broader coverage and better contracts.

Not only does Blue Shield's momentum of growth permit no turning back, but it has grown so big that the public interest in Blue Shield has made it a major item in America's program for social progress. The continued growth of Blue Shield is essential to the best interests of both medicine and the public.

Why essential?

First, because Blue Shield is a major factor in medicine's economy. Whereas installment buying creates a debt and mortgages the future, medical prepayment creates a credit for the patient, and protects his future.

Again, Blue Shield's growth safeguards its actuarial base of operations. As risks are spread ever more widely, the community and the doctor gain a surer protection against fluctuations affecting the subscription rates or payments to physicians.

A third benefit of Blue Shield growth is the opportunity to reduce operating costs per person enrolled. This helps the plan to broaden its services or to raise its payments to doctors — or both.

Fourthly, the greater the number of his patients covered by prepayment, the fewer for whom the doctor has a collection problem, and the lighter his load of free or part-pay work.

Medicine's most significant benefit from the growth of Blue Shield is the dominant influence of the medically guided Blue Shield Plans on the shape and destiny of the voluntary health insurance movement as a whole. Were it not for Blue Shield, the medical profession would have no effective control over the basic economy of private practice.

Blue Shield is big because it has a big job to do for the doctor and his patient. But the size of Blue Shield is only a reflection of the vision and boldness that the American doctor has brought to bear on this job.

INSECTICIDES ARE HARMLESS WHEN USED CORRECTLY

By J. N. Roney

Extension Entomologist

University of Arizona

Agricultural Extension Service

DURING the spring, summer and fall we read or hear something almost daily about how insecticides, especially the new ones are poisoning our foods and livestock, as well as people. Yes, we consider all insecticides poisonous to man as well as warm blooded animals. We know though that if these insecticides we now use are applied according to directions no problems will develop.

Before the use of DDT, Benzene Hexachloride (BHC), Chlordane, Toxaphene, Malathion, Aldrin, Dieldrin and other organic insecticide we were using Arsenicals, Fluorines, Nicotines and Cyanides with very few complaints. We know that Arsenicals and Fluorines were used on our fruits, apples, peaches, plums, pears and apricots. We also know that apples had to be washed with a weak acid before eating to prevent being poisoned by Arsenicals or Fluorines. We also know that Arsenicals and Fluorine could not be applied to vegetables 30 days prior to harvest. We used them but seldom had any trouble. Cyanide, a very deadly insecticide has been used for years for fumigation purposes. We followed directions at all times and never got into any trouble. Nicotines are very poisonous and people have used them for years, but they always follow directions. Aspirin can be deadly.

With the introduction in 1945 of these new insecticides like DDT, BHC and so forth we found that we could get very excellent controls of insects at very economical costs. In fact since these materials have been used for control of cotton insects, we have raised the Arizona Cotton Yields from 500 pounds (1 bale) to over 1100 pounds or over two bales per acre. These are the highest yields anywhere in the world.

With the building of suburban homes near agricultural crops we have had many com-

plaints of the insecticides injuring people and livestock. We never recommend an insecticide until the research workers have tested these materials. We have never had anyone killed by insecticides drifting from a field into a home. Sometimes some of these materials smell bad or inconvenience one but there is not enough material present in the insecticide drift that would kill one. Some people are allergic to road dusts and thus could be annoyed by an insecticide. We recommend the use of insecticides for control of insects that would otherwise destroy the crops. Research has shown that the materials will not harm anyone if directions are followed.

Insecticides have helped us produce the best quality of vegetables and fruit you can find anywhere. The cotton yields mentioned above are also examples of what the insecticides are doing for us.

The research people are constantly developing new insecticides for us to use. Under the Pure Food Laws none of the new materials will be used until they have been tested for injury to people, livestock, beneficial insects and other plants. We need these new insecticides since many of the insects are developing resistance to the present recommended insecticides.

Yes, insecticides are harmless if directions are followed. The drift of insecticides generally speaking may annoy us but are not very poisonous.

NEW BOOKLET ON ECONOMIC POISONS AVAILABLE

SINCE there have been some deaths from parathion poisoning in recent months in this state, every doctor should be interested in a booklet which has been prepared by the Technical Development Laboratories of the Communicable Disease Center in Savannah, Georgia — a division of the Public Health Service under the United States Department of Health, Education, and Welfare. This booklet entitled "Clinical Memoranda on Economic Poisons" has been reproduced as a public service by the National Agricultural Chemicals Association and may be obtained by request to this organization whose address is Associations Building, 1145 Nineteenth Street, N. W., Washington 6,

D. C. The publication deals with most of the industrial compounds which are poisonous under certain conditions and which are used in insecticides and crop dusting as well as in other industrial applications. Included are some of the more recent insecticides such as the parathion and even the more prosaic materials such as kerosene. For each of these chemicals the booklet gives authoritative information on the uses, the routes of absorption, physiological action, dangerous dosages for man, signs and symptoms of poisoning in man, and laboratory findings, treatment, and in other words the most complete authoritative recent information of which I know. Special directions are given for the various laboratory procedures in studying cases of poisoning, treatment information is given and this booklet should be a very welcome addition to every physician's library.

ARIZONA MEDICAL ASSOCIATION LOCATION OPPORTUNITIES

ASHFORK — Pop. 700 — North centrally located — Railroad center — Contact Mr. J. J. Slamon, Justice of Peace, Ashfork, Arizona.

CAMP VERDE — Located in the heart of a large farming and ranching area on the Verde River — Approximately 100 miles north of Phoenix. Badly in need of a medical doctor. Contact Ivy N. Moser, R. N., Camp Verde, Arizona.

BENSON — Excellent opportunity for GP — This David-Benson trade area has about 5000 population with only one doctor available. Contact Mrs. Thomas Allen, Secretary, Benson Business Association, Benson, Arizona.

DAVIS-MONTHAN AIR FORCE BASE — Located on outskirts of Tucson — In need of a General Medical and Surgical officer part time, \$7,465.00 per year. Application should be made to the Civilian Personnel Office at Davis-Monthan.

DOUGLAS — Pop. 10,000 — On the Mexican border in the southeast section of Arizona — Opportunity for associate practice in OALR. Contact James S. Walsh, M.D., 631 9th Street, Douglas, Arizona.

FLAGSTAFF — Pop. 7-500 — Largest city in the north central Arizona trading area — Navajo Ordnance Depot is in the process of recruiting for a medical officer. Navajo Ordnance Depot, Flagstaff, Arizona.

FLAGSTAFF — Excellent opportunity for a pediatrician and for a radiologist. Please contact Morris M. Zack, M.D., 411 Birch Street, Flagstaff, for further information.

GILA BEND — Pop. 2,500 — 80 miles west of Phoenix — Good opportunity for general practitioner. Cattle, cotton and general farming. Office and equipment available. \$150 monthly income from Board of Supervisors. Contact Mrs. J. F. Allison, Box 126, Gila Bend, Arizona.

LAS CRUCES, NEW MEXICO — In South Central part of State and not too distant from El Paso, Texas. Population is approximately 22,000, boasts State College and White Sands proving grounds. General Hospitals, 85 beds, fully accredited and staffed by fourteen (14) doctors. Needs Urologist and/or Obstetrician-Gynecologist. For full details write: A. M. Babey, M.D., President of the Staff, 250 West Court Street, Las Cruces, New Mexico.

MORENCI — Mining community located near New Mexico-Arizona border. Has vacancy at hospital for GP. Contact Carl H. Gans, M.D., Morenci Hospital, Morenci, Arizona.

SUPERIOR — Mining community located approximately 75 miles east of Phoenix. A vacancy exists at industrial hospital. General practice and surgery combination desirable. Contact Howard W. Finke, Chief Surgeon, Magma Hospital, Superior, Arizona.

TUCSON — An opening in the Outpatient Department of the Veterans Administration Hospital for a generalist or internist. State license is necessary but not necessarily an Arizona license. If interested, contact S. Netzer, M.D., Director, Professional Service, V. A. Hospital, Tucson, Arizona.

TUCSON — Opening for a board certified or board eligible Orthopedist to form and head an Orthopedic Department in the Tucson Clinic. Must have had good training in pediatric orthopedics as well as acute trauma and reconstructive work. Are looking for a younger man; however, are willing to consider any well-trained physician regardless of age. Tucson has a metropolitan population of close to 200,000 at the present time. If interested, contact D. J. Heim, M.D. The Tucson Clinic, 116 North Tucson Boulevard, Tucson, Arizona.

TUCSON — Looking for a General Practi-

tioner for plant services — \$750.00 monthly, 5 days a week. Contact Doctor Meade Clyne 116 North Tucson Blvd., Tucson, Arizona.

YOUNGTOWN — Pop. 130 — Located 16 miles from Phoenix, 4 miles from Peoria, 1½ miles from El Mirage, 1 mile from Surprise, each a potential field of practice. Most residents are 60 years of age or older and are in need of medical care. Office space is currently provided at no rental. A medical center is being planned. Interested doctors may contact Mr. Sid Lambert, Box 61, Marionette, Arizona.

YUMA — Pop. 15,000 — Situated in the Southwest corner of the State on the Colorado River — In need of a country physician. This is an ideal set-up for a retired or semi-retired doctor. The doctor could devote all of his time to the job or have a private practice in addition. If interested, call Mr. Robert Odom, collect at SUnset 3-7843 as soon as possible.

FOR INFORMATION ON OPPORTUNITIES IN THE FIELD OF INDUSTRIAL MEDICINE, CONTACT:

Harold J. Mills, M.D., Phelps Dodge Hospital, Ajo, Arizona

Carl H. Gans, M.D., Phelps Dodge Hospital, Morenci, Arizona

Ira E. Harris, M.D., Miami Inspiration Hospital, Miami, Arizona

Charles B. Huestis, M.D., Mox 928, Hayden, Arizona

Elvie B. Jolley, M.D., Copper Queen Hospital, Bisbee, Arizona

H. W. Finke, M.D., Magma Copper Company Hospital, Superior, Arizona

John Edmonds, M.D., Kennicott Copper Corporation Hospital, Ray, Arizona

The Responsibilities of the Medical Profession In the Use of X-Rays and Other Ionizing Radiation

Statement by the United Nations Scientific Committee on the Effects of Atomic Radiation

1. **T**HE UNITED Nations General Assembly, being aware of the problems in public health that are created by the development of atomic energy, established a Scientific Committee on the Effects of Atomic Radiation. This Committee has considered that one of its most urgent tasks was to collect as much information as

possible on the amount of radiation to which man is exposed today, and on the effects of this radiation. Since it has become evident that radiation due to diagnostic radiology and to radio-therapy constitutes a substantial proportion of the total radiation received by the human race, the Committee considers it desirable to draw attention to information that has been obtained on this subject.

2. Modern medicine has contributed to the control of many diseases and has substantially prolonged the span of human life. These results have depended in part on the use of radiation in the detection, diagnosis and treatment of disease. There are, however, few examples of scientific progress that are not attended by some disadvantages, however slight. It is desirable therefore to review objectively the possible present or future consequences of increased irradiation of populations which result from these medical applications of radiation.

3. It is now accepted that the irradiation of human beings, and particularly of their germinal tissues, has certain undesirable effects. While many of the somatic effects of radiation may be reversible, germinal irradiation normally has an irreversible and therefore cumulative effect. Any irradiation of the germinal tissues, however slight, thus involves genetic damage which may be small but is nevertheless real. For somatic effects there may however be thresholds for any irreversible effects, although if so these thresholds may well be low.

4. The information so far available indicates that the human race is subjected to natural radiation,* as well as to artificial radiation due to its medical applications, to atomic industry and its effluents and to the radioactive fall-out from nuclear explosions. The Committee is aware of the potential hazards that such radiation involves, and it is collecting and examining information on these subjects.

5. The amount of radiation received by the population for medical purposes is now, in certain countries, the main source of artificial radiation and is probably about equal to that from all natural sources. Moreover, since it

*The radiation due to natural sources has been estimated to cause between 70 and 170 millirem of irradiation to the gonads per annum in most parts of certain countries in which it has been studied, although higher values are found locally in some areas. See the reports "The hazards to man of nuclear and allied radiations" published by the United Kingdom Medical Research Council in June 1956, in which also the millirem is defined; and from information submitted to the Committee.

is given on medical advice, the medical profession exercises responsibility in its use.

6. The Committee appreciates fully the importance and value of the correct medical use of radiation, both in the diagnosis of a large number of conditions, in the treatment of many such diseases as cancer, in the early mass detection of conditions such as pulmonary tuberculosis, and in the extension of medical knowledge.

7. Moreover, it appreciates fully the contribution of the radiological profession, through the International Commission on Radiological Protection** in recommending maximum permissible levels of irradiation. As regards those whose occupation exposes them to radiation, the establishment of these levels depends on the view that there are doses which, according to present knowledge, do not cause any appreciable body injury in the irradiated individual; and also on the consideration that the number of people concerned is sufficiently small for the genetic repercussions upon the population as a whole to be slight. Whenever exposure of the whole population is involved, however, it is considered prudent to limit the dose of radiation received by germinal tissue from all artificial sources to an amount of the order of that received from the natural background radiation.

8. It appears most important therefore that medical irradiations of any form should be restricted to those which are of value and importance, either in investigation or in treatment, so that the irradiation of the population may be minimized without any impairment of the efficient medical use of radiation.

9. The Committee is consequently anxious to receive information through appropriate governmental channels as to the methods and the extent by which such economy in the medical use of radiation can be achieved, both by avoiding examinations which are not clearly indicated and by decreasing the exposure to radiation during examinations, particularly if the gonads, or the foetus during pregnancy lie in the direct beam of radiation. It seeks, in particular, to obtain information as to the reduction in radiation of the population which might be achieved

by improvements in instrument design, by fuller, training of personnel, by local shielding of the gonads, by choosing appropriately between radiography and fluoroscopy, and by better administrative arrangements to avoid any unnecessary repetition of identical examinations.

10. The Committee also seeks the co-operation of the medical profession to make possible an estimate of the total radiation received by the germinal tissue of the population before and during the child-bearing age. It considers it to be essential that standardized methods of measurement, of types at present available, should be widely used to obtain this information and it emphasizes the value of adequate records, maintained by those using radiation medically, by the dental profession, and by the responsible organizations in allowing such radiation exposure to be evaluated. The Committee is convinced that information of this type will make it possible to decrease the total medical irradiation of the population while preserving and increasing the true value of the medical uses of radiation.

BEGINNING AND THE END

By Robert E. Jones, M.D.

MOST DOCTORS know little, if anything, regarding the laws pertaining to births and deaths. The following synopsis has been prepared to acquaint you with the Arizona laws.

The Birth Certificate shall contain: The place of birth, the full name and sex of the child, statement of singular, or plural birth, date of birth, data concerning the father and mother. This certificate must be filed with the local registrar within ten days after the birth. Any person who knowingly inserts false information is guilty of a misdemeanor.

The death certificate shall contain: The place of death, full name and sex, the color or race, marital status, date of birth, birthplace, occupation, data concerning father and mother. The certificate should be filed within three days following death. A medical certificate must be completed and signed by a physician if one has been in attendance on the deceased. It shall specify the time in attendance, the time patient was last seen, the hour of the day on which the death occurred, the cause of death, the course of the disease, the name of the disease, contributing causes, if any, and length

**See the report of the International Commission on Radiological Protection (published in the *British Journal of Radiology* - Supp. 6, of December 1954 - in the *Journal francais d'electro-radiologie* - No. 10, of October 1955 - etc. and revised in 1956).

of residence at the place of death. There is required a determination of whether the death was accidental, suicidal, homicidal, or due to natural causes. False information on a death certificate is a misdemeanor.

STATEMENT OF HOXSEY CANCER TREATMENT

By Geo. P. Larrick

Commissioner of Food and Drugs

FOR THE second time, a Federal court has determined that the Hoxsey medicines for internal cancer are worthless. After a six-week trial in the Federal court at Pittsburgh, the jury returned a verdict that these medicines, in pill form, were illegally offered as an effective treatment for cancer.

The public should know, however, that this action does not end the menace of this fake treatment. It merely means that half a million of the Hoxsey pills, which were seized shortly after the opening of a second Hoxsey Clinic at Portage, Pa., will now be destroyed. An injunction is being brought to stop further interstate shipment of the pills. We intend to use every legal means within our power to protect consumers from being victimized by this worthless treatment.

In the meantime it is of the utmost importance that cancer patients and their families, who may be planning to try the Hoxsey treatment either at Dallas, Texas, or Portage, Pa., should acquaint themselves with the facts about it. All such persons are advised to secure a copy of the Public Warning which was issued by the Food and Drug Administration last April. They may do this by writing to the Food and Drug Administration, Washington 25, D. C.

Harry M. Hoxsey has continued to promote his worthless cure for more than 30 years, notwithstanding numerous local and state court actions. Proceedings under the Federal Food, Drug, and Cosmetic Act did not appear possible until a 1948 decision of the Supreme Court interpreting the word "accompanying" in the definition of labeling under the Act. An injunction suit was filed in 1950 and a decree finally issued by the Federal court at Dallas in 1953.

Over the years thousands of persons have been deceived by the false claims for the Hoxsey liquid medicines and pills. At the Pittsburgh trial there was testimony concerning per-

sons who may have died of cancer as a result of reliance on the Hoxsey treatment instead of seeking competent medical treatment in the early stages of their condition. The Government's evidence showed that alleged "cured cases" presented by defense attorneys were people who did not have cancer, or who were adequately treated before they went to the Portage Clinic, or died of cancer after they had been treated there.

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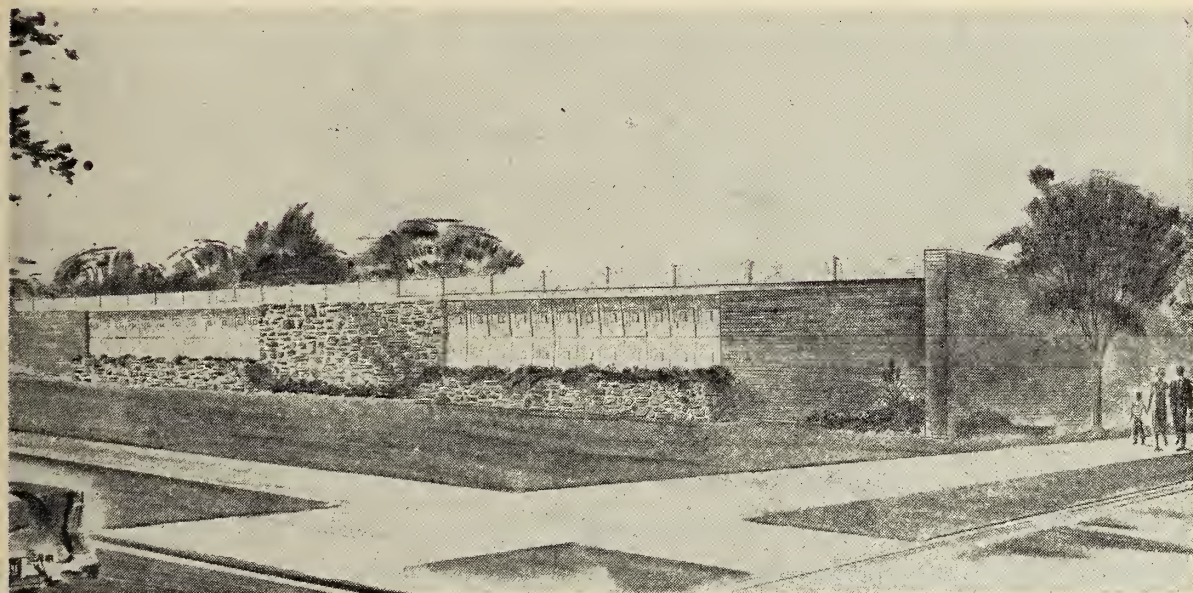
each coated tablet:

| | |
|---|-----------|
| Phenacetin (3 gr.) | 104.0 mg. |
| Acetylsalicylic Acid (2½ gr.) | 162.0 mg. |
| Phenobarbital (¼ gr.) | 16.2 mg. |
| Hyoscyamine Sulfate | 0.031 mg. |
| Prophepyridamine Maleate | 12.5 mg. |
| Phenylephrine Hydrochloride | 10.0 mg. |



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Carlos C. Craig, M.D.

PRESIDENT ELECT ARIZONA MEDICAL ASSOCIATION INC., 1956-1957

Carlos C. Craig, M.D., was born April 5, 1905 in Charleston, Illinois. Parents, Doctor & Mrs. Robert Hanson Craig. his only sister died in 1918 of influenza.

Graduated 1922 Charleston High School, University of Illinois Pre-Medical, 1922-1924.

University of Illinois, College of Medicine, 1924-1929, and graduated with a B.S. and M.D.

He interned at Augustana Hospital 1929-1930. Externship Augustana Hospital 1927-1928. Residency St. Joseph's Hospital, Phoenix, Arizona, 1930-1932.

Practice was begun in Phoenix, on January 1932 to the present except for A.U.S. 1942-1946.

Service to the U.S. consisted of the following: Adjutant Station Hospital, Davis Monthan; C.O. Hospital Grand Island, Nebraska and Woodward, Oklahoma. Medical Inspector 2nd Air Force, Colorado Springs; Flight Surgeon 318th Fighter Group IeoShima. Attended the Mayo Foundation Army School, 1944; 3rd Medical Inspector's Class, Carlisle Barracks, Pa.; Flight Surgeon's School, Randolph Field, Texas. Entered U. S. Service with the rank of Captain, and was discharged with rank of Lt. Colonel.

Dr. Craig married Josephine Baptist on December 25, 1927 in Phoenix, Arizona. They have two children, Ann Fairfax Craig who married W. H. Bond, M.D. and have one child, Carlos William 14 months old. Frank Robert Craig, who married Margaret Ann Peel.

A delegate for years, Speaker of the House 1941-1942; Chairman Legislative Committee 1951; Council 1954; Vice-President Arizona Medical Association 1955; President-Elect 1956; Secretary Arizona Blue Shield from the time it was planned (1947) and officially 1948-1949; President Arizona Blue Shield 1950-1951; President Maricopa County Medical Society 1955; Member A.A.G.P.

He belongs to St. Joseph's Hospital staff also Good Samaritan, member of the Council; St. Luke's Hospital, Chairman of G. P. Section; Memorial Hospital; John C. Lincoln, Courtesy Staff.

Belongs to the Phoenix Country Club; Valley Field Riding and Polo Club, director 1956; Kiva Club; Phoenix Rotary Club.



Carlos C. Craig, M.D.

Forthcoming Meetings

SIXTY-SIXTH

ANNUAL MEETING

THE

ARIZONA MEDICAL

ASSOCIATION

INC.

YUMA, ARIZONA

April 10, 11, 12, 13, 1957

STARDUST HOTEL

HEADQUARTERS - STARDUST HOTEL

Official Call

The Arizona Medical Association, Inc., takes pleasure in announcing its Sixty-Sixth Annual Meeting to be held at Yuma, April the tenth through April the thirteenth, Nineteen Hundred Fifty-seven. The Woman's Auxiliary will meet concurrently. Headquarters — Stardust Hotel.

A. I. Podolsky, M.D.
President

SCHEDULE OF MEETINGS

REGISTRATION

April 10, 11, 12, 13 each dayLobby
7:30 A.M. through dayFee \$10.00

SCIENTIFIC SESSIONS

Thursday morning, April 11see page 180
Thursday afternoon, April 11see page 180
Friday morning, April 12see page 180
Saturday morning, April 13.....see page 181

Note: All papers except those of guest orators limited to time of schedule.
All papers to be published in Arizona Medical Journal.

COUNCIL SESSIONS

First Meeting, April 10see page 179
Second Meeting, subject to call

HOUSE OF DELEGATES

First Meeting, April 11see page 179
Second Meeting, April 13see page 181
Additional Sessions of House Subject to Call

REFERENCE COMMITTEE MEETINGS

April 11 and 12To be announced

BLUE SHIELD

Corporate Meeting, April 10see page 179

SPECIALTY GROUP

LUNCHEON-MEETINGS

Thursday, April 11see page 180
Friday, April 12see page 180

ENTERTAINMENT

Social Hour and Buffet Supper
April 10see page 179

Social Hour, April 11see page 180
President's Dinner Dance, April 12.see page 181
Annual Golf Tournament, April 13..see page 181

WOMAN'S AUXILIARY

Program of the Woman's Auxiliary.see page 190

PROGRAM

Wednesday, April 10

COUNCIL SESSIONS

10:00 A.M. Council SessionPlanet Room
1:00 P.M. Council Luncheon ...Dining Room

BLUE SHIELD

2:00 P.M. Annual Corporation Meeting
(House of Delegates) ..Planet Room
Followed by
Meeting of Board of Directors
Planet Room

Annual report of L. Donald Lau,
DirectorPlanet Room

ENTERTAINMENT

6:30 P.M. Reception — Social Hour ...Patio
7:30 P.M. Buffet Supper
(Admission by ticket)Patio

Thursdays, April 11

HOUSE OF DELEGATES

8:00 A.M. House of Delegates —
First SessionPlanet Room

9:00 A.M. Visit your exhibits —
Refreshments — Coffee and Coke

GENERAL SESSION

9:30 A.M. General SessionPlanet Room

Call to Order
Abe I. Podolsky, President

Invocation
Reverend Charles H. Crawford

Welcome
John F. Stanley, President
Yuma County Medical Society

Response

Donald E. Nelson, Safford
 Introduction of President
 Abe I. Podolsky, Officiating
 Presidential Address
 Carlos C. Craig, Phoenix

SCIENTIFIC SESSION

10:00 A.M. Scientific Session Planet Room
 Willard V. Ergenbright .. Officiating
 Panel Discussion on BACKACHE
 Albert G. Bower, Pasadena . . . (Medicine)
 Henry D. Brainerd, San Francisco
 (Medicine)
 Leon Goldman, San Francisco .. (Surgery)
 Raymond R. Lanier, Denver .. (Radiology)
 Joseph C. Risser, Pasadena
 (Orthopaedics)
 (Questions and answers)
 12:15 P.M. Press Conference — All guest orators
 participating Planet Room

**SPECIALTY GROUP
 LUNCHEON-MEETINGS**
Thursday, April 11 — 12:30 P.M.

Arizona State Society of Anesthesiologists
 Jean's Log Cabin Steak House .. 2020 Third Ave.
 (Luncheon and Business Meeting)
 Arizona Arthritis Association
 Loo's Restaurant 2100 Fourth Ave.
 (Luncheon only)
 Arizona Pediatric Society
 Stardust Hotel Dining Room
 Speaker: Henry D. Brainerd, San Francisco
 Subject: Management of Infectious Diseases
 of the Central Nervous System

SCIENTIFIC SESSION

2:00 P.M. Scientific Session Planet Room
 Paul J. Slosser Officiating
 1. Present Status of Chemotherapy —
 Henry D. Brainerd, San Francisco
 (2:00 - 2:30 P.M.)
 2. The Threat of Strangulation in
 Acute Intestinal Obstruction —
 Leon Goldman, San Francisco
 (2:30 - 3:00 P.M.)
 3. Roentgen Diagnosis of the Com-
 monplace Arthritides — Raymond
 R. Lanier, Denver (3:00 - 3:30
 P.M.)
 3:30 P.M. Visit your exhibits —
 refreshment — coffee and coke
 4. Diagnosis and Treatment of the
 Great Simulator, Infectious Mono-
 nucleosis — Albert G. Bower, Pasa-
 dena (3:45 - 4:15 P.M.)
 5. Management of Acute Anuria —
 Joseph H. Holmes, Denver (4:15 -
 4:45 P.M.)
 6. Scoliosis — Joseph C. Risser, Pasa-
 dena (4:45 - 5:15 P.M.)

5:15 P.M. Press Conference — all guest
 orators participating . . . Planet Room

ENTERTAINMENT

6:00 P.M. Reception — Social Hour . . . Patio

SCIENTIFIC SESSION**Friday, April 12**

9:00 A.M. Scientific Session Planet Room
 Walter Brazie Officiating
 1. Diagnosis of Acute Chest Pain —
 Henry D. Brainerd, San Francisco
 (9:00 - 9:30 A.M.)
 2. Jaundice — Philip Thorek, Chicago
 (9:30 - 10:00 A.M.)
 3. Recent Advances in Surgery of the
 Gastrointestinal Tract — Leon
 Goldman, San Francisco (10:00 -
 10:30 A.M.)
 10:30 A.M. Visit your exhibits —
 refreshment — coffee and coke
 4. Treatment of Mumps and Its Com-
 plications in the Adult Male —
 Albert G. Bower, Pasadena (10:45
 - 11:15 A.M.)
 5. Office Gynecology — N. Paul Is-
 bell, Denver (11:15 - 11:45 A.M.)
 6. Early Clinical Differentiation of
 Benign, Pre-Malignant and Malig-
 nant Cutaneous Neoplasms —
 Donald J. McNairy, Phoenix (11:45
 12:05 P.M.)
 12:15 P.M. Press conference —
 all guest orators participating
 Planet Room

**SPECIALTY GROUP
 LUNCHEON-MEETINGS**
Friday, April 12 — 12:30 P.M.

Arizona Chapter, American College of Chest
 Physicians
 Flamingo Hotel Restaurant .. 2415 Fourth Ave.
 Speaker: Henry D. Brainerd, San Francisco
 Subject: The Diagnosis and Treatment of the
 Pneumonias
 Arizona Academy of General Practice
 Stardust Hotel Dining Room
 Arizona Chapter, Western Orthopaedic
 Association
 Loo's Restaurant 2100 Fourth Ave.
 Speaker: Raymond R. Lanier, Denver
 Subject: Roentgen Demonstration of Unusual
 Fractures
 Arizona Chapter, American College of Surgeons
 Jean's Log Cabin Steak House .. 2020 Third Ave.
 Speaker: Leon Goldman, San Francisco
 Subject: Getting the Surgeon Ready for
 Surgery
 Speaker: Philip Thorek, Chicago
 Subject: The Injured Common Duct,
 Prevention and Correction

SCIENTIFIC SESSION

- 2:00 P.M. Scientific Session Planet Room
William B. Steen Officiating
Introduction of President of AMA by Jesse D. Hammer, Delegate
1. AMA and Its Stand on Accreditation — Dwight H. Murray, Napa (2:00 - 2:30 P.M.)
 2. Only an Appendix — Philip Thorek, Chicago (2:30 - 3:00 P.M.)
 3. The Diagnostic Roentgen Findings in Study of the Acute Abdomen — Raymond R. Lanier, Denver (4:15 - 4:45 P.M.)
 6. The Analysis and Treatment of the Common Foot Disorders (4:45 - 5:15 P.M.)
- 5:15 P.M. Press conference — all guest orators participating Planet Room

ENTERTAINMENT

- 6:00 P.M. Reception — Social Hour Patio
7:45 P.M. President's Dinner Dance
Planet Room
- Note: Through the courtesy and with the compliments of our own Arizona "Drug Travelers," a corsage will be presented to each of our gracious ladies in attendance. We acknowledge with grateful appreciation this gesture of esteemed friendship.

- Saturday, April 13**
HOUSE OF DELEGATES
- 8:00 A.M. House of Delegates —
Second Session Planet Room
- 10:00 A.M. Visit your exhibits —
refreshment — coffee and coke

SCIENTIFIC SESSION

- 10:15 A.M. Scientific Session Planet Room
Ashton B. Taylor Officiating
Panel Discussion on POST-OPERATIVE CARE
Joseph H Holmes, Denver (Medicine)
N. Paul Isbell, Denver
(Obstetrics & Gynecology)
Philip Thorek, Chicago (Surgery)
- 12:15 P.M. Press conference — all guest orators participating Planet Room

GOLF TOURNAMENT

- 1:00 P.M. Annual Handicap Golf Tournament (stag) Yuma Country Club
Paul J. Slosser, Chairman
Robert A. Stratton
G. Calvin Williamson
- The members of the Association and particularly the golfers wish to express grateful appreciation and thanks to all those so generously contributing prizes for this event.

GUEST ORATORS



ALBERT G. BOWER
Clinical Professor of Medicine,
University of Southern California
School of Medicine

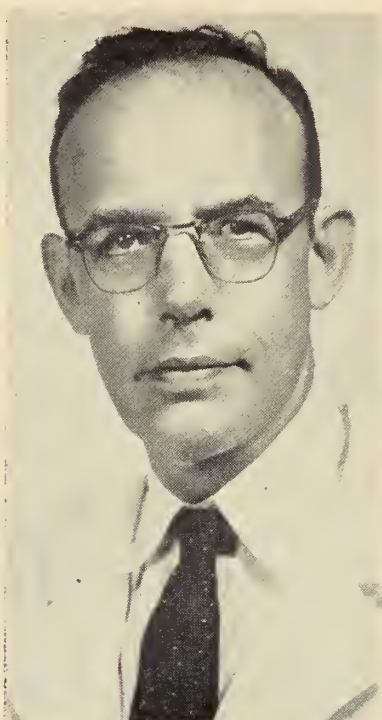


HENRY D. BRAINERD
Professor of Medicine and Chairman
of the Department of Medicine,
University of California
School of Medicine

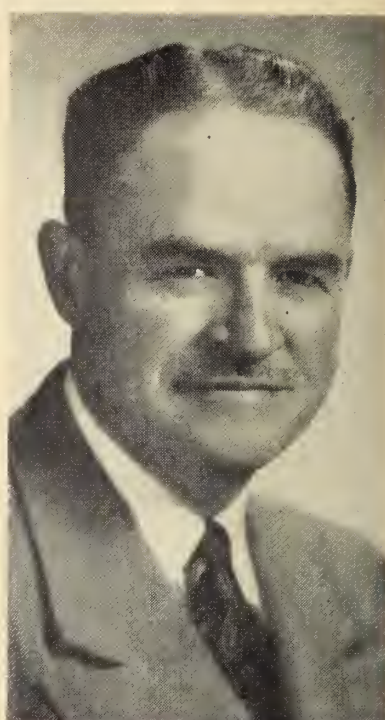
GUEST ORATORS



LEON GOLDMAN
Chairman, Department of Surgery,
University of California
School of Medicine



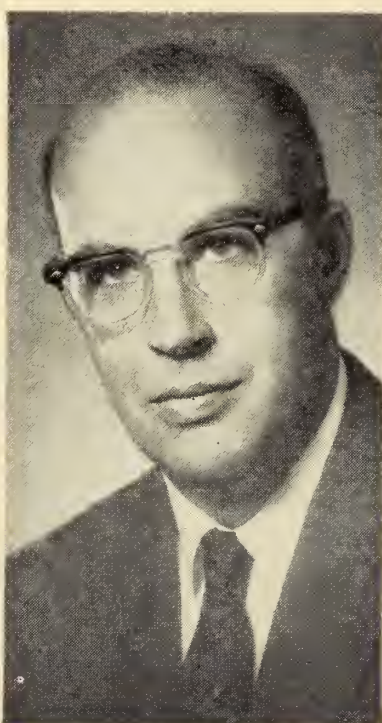
JOSEPH H. HOLMES
Professor and Head of Laboratory
Medicine and Clinical Pathology,
University of Colorado
School of Medicine



N. PAUL ISBELL
Association Clinical Professor of
Obstetrics and Gynecology,
University of Colorado
School of Medicine



RAYMOND R. LANIER
Professor of Radiology,
University of Colorado
School of Medicine

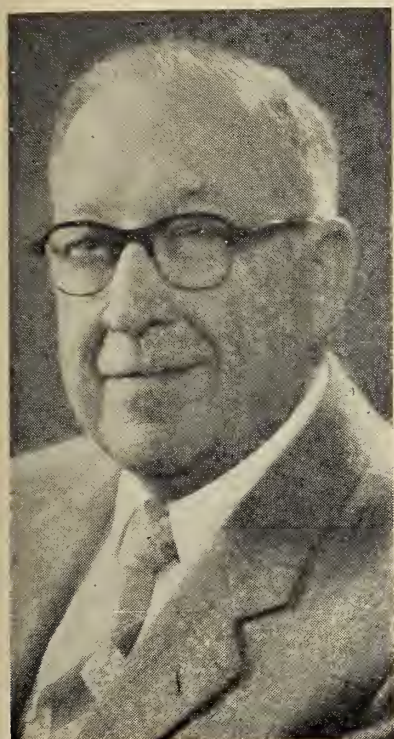


DONALD J. McNAIRY
Dermatologist, Phoenix



JOSEPH C. RISSE
Associate Professor of Orthopaedics,
College of Medical Evangelists

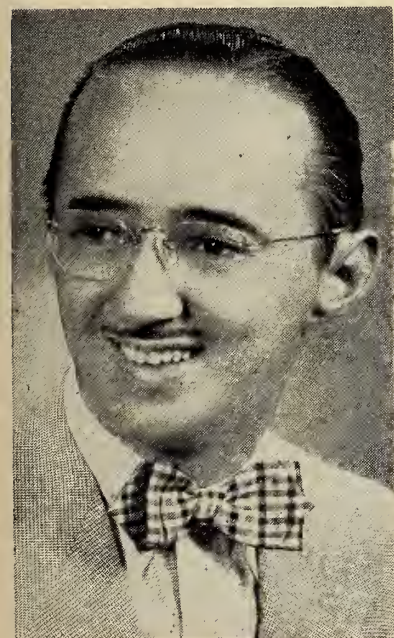
GUEST ORATORS



DWIGHT H. MURRAY
President,
American Medical Association



PHILIP THOREK
Assistant Professor of Surgery,
University of Illinois
College of Medicine



ABE I. PODOLSKY
Yuma, Arizona
President
Arizona Medical Association, Inc.



DERMONT W. MELICK
Phoenix, Arizona
Secretary
Arizona Medical Association, Inc.

1957 ANNUAL MEETING

INTRODUCING Joseph C. Risser, M.D., Professor of Orthopaedics at the College of Medical Evangelists in Los Angeles.

Doctor Risser was born in Des Moines, Iowa and received his doctor of medicine degree from the University of Iowa School of Medicine in 1923. His internship was served at the Latter Day Saints Hospital, Salt Lake City, Utah, and he served a fellowship at the New York Orthopaedic Dispensary and Hospital from 1926 to 1930. From 1930 to 1932 Doctor Risser served as an instructor at Columbia University College of Physicians and Surgeons. He is currently a staff member at St. Luke Hospital, Pasadena; Orthopaedic Hospital, Los Angeles; Huntington Memorial Hospital, Pasadena; and White Memorial Hospital, Los Angeles. He has written numerous articles for publication, particularly on scoliosis. He just returned from South America, where he was invited to give a talk at the Convention of the Brazillian College of Surgeons on Scoliosis.

1957 ANNUAL MEETING

INTRODUCING Doctor Dwight H. Murray of Napa, California, President of the American Medical Association.

Doctor Murray received his Doctor of Medicine degree at the Indiana University Medical School in 1917 and did postgraduate work at the University of Pennsylvania and the U. S. Naval Medical School. In 1922, following his discharge from the Navy where he served five years in the Medical Corps, he located in Napa where he has since carried on as a general practitioner, specializing in internal medicine. He is chief of the medical staff at Parks Victory Memorial Hospital in Napa.

He was president of his county medical association, then a delegate to the California Medical Association. He was named Chairman of that association's Committee on Public Policy and Legislation in 1940. In 1944 and 1945, he was a delegate from CMA to the American Medical Association House of Delegates. Soon afterward his extensive knowledge and cogent abilities in the field of politics as they affected the practice of medicine were given broader recognition in his election to membership on the AMA Board of Trustees in 1945. He became

Vice-Chairman of the Board in June 1950 and Chairman in June, 1951. He also was Chairman of the Board's Committee on Legislation from January, 1950 to December 1951.

Doctor Murray — "Murph" to his many friends — has been aptly called "a most persuasive listener." Slow and deliberate of speech, he impresses even opponents with the calm of his sureness. Patients and neighbors who know him in his own community as a physician and friend agree with his own description of himself: "family style doctor."

The President, a farm-born Hoosier, was born in 1888. Married in 1921 to Miss Genevieve Collins, he is the father of two children, a daughter, and a son who is at present assistant resident on the surgical service of the University of California Hospital. He has five grandchildren.

The Arizona Medical Association is privileged indeed to anticipate participation in its 66th Annual Meeting program of so distinguished a personage and is looking forward to greeting Doctor Murray and his charming wife.

1957 ANNUAL MEETING

INTRODUCING Doctor Joseph H. Holmes, Professor and Head of Laboratory Medicine and Clinical Pathology, University of Colorado School of Medicine.

Doctor Holmes was born in Fremont, Ohio in 1909. He received his Bachelor of Arts degree from Amherst College, and was granted his doctor of medicine degree by Western Reserve University School of Medicine in 1934. He also holds a Doctor of Medical Science degree from Columbia University, which he received in 1941. His internship was served at Emory University Hospital, Atlanta, from 1934 to 1935. From 1935 to 1937 he served a residency in Medicine at University Hospital, Baltimore under Doctor Pincoffs and had a fellowship at Columbia University in Medical Sciences from 1938 to 1939. He was an instructor and subsequent Assistant Professor of Physiology from 1938 to 1947 with two years out for service in the Army. In 1947 he became associated with the University of Colorado School of Medicine as Associate Professor of Medicine and served in that capacity until 1951, when he became Professor of Medicine. He has been Head of the Division of Laboratory Medicine and Clini-

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cal Pathology from 1953. He was certified by the American Board of Internal Medicine in 1945 and the American Board of Pathology in Clinical Pathology in 1955.

Doctor Holmes' main research interests have been in the fields of fluid and electrolyte metabolism and renal diseases. He is a member of many medical organizations and societies.

31st ANNUAL CONGRESS OF ANESTHETISTS

THE 31st Annual Meeting of the International Anesthesia Research Society will be held April 1-4 at the Westward Ho in Phoenix. Among local people who will be serving as Moderators or Discussants are: Preston Brown, Dan Cloud, Paul Case, Allen Carter and Ernie Watts, all physicians, and Ed (Bud) Jacobson, our legal adviser.

MEETING—AMERICAN ACADEMY OF GENERAL PRACTICE

NINTH ANNUAL Scientific Assembly, March 25-28 in St. Louis' Kiel Auditorium.

More than 25 prominent physician — authorities will appear on the four-day scientific program. In addition, the more than 5,000 family doctors expected to attend will have opportunities to visit 73 scientific and 260 technical exhibits. The Academy, founded in 1947 and headquartered in Kansas City, Mo., has more than 21,000 family doctor members and is the nation's second largest medical association.

The Assembly is a vital part of the Academy's postgraduate study program. Of the more than 100 national medical groups, the Academy is the only one that requires continuing postgraduate study as a membership requirement. Every three years, each member must complete 150 hours of accredited postgraduate work.

MEETING NOTICE

9th ANNUAL MEETING

SOUTHWESTERN SURGICAL CONGRESS

APRIL 15th to 17th, 1957

HOTEL BROADVIEW, WICHITA, KANSAS

Jet-Atomic Flight Problems Highlight Aero Medical Ass'n. 1957 Meeting

MEDICINE in the jet-atomic age of flight will be the central theme of the 28th annual meeting

of the Aero Medical Association at the Shirley Savoy Hotel in Denver, May 6-8, 1957.

The scientific program will include reports on emergency escape from high performance aircraft, new developments in airline passenger comfort and safety, and current research in manned space satellites.

SECOND INTER-AMERICAN MEDICAL CONVENTION

THE SECOND Inter-American Medical Convention will convene at the Hotel El Panama, Panama City, Republic of Panama, April 3, 4 and 5th, 1957, under the sponsorship of the Medical Society of Isthmian Canal Zone, a chapter of the American Medical Association since 1906. Colonel Charles O. Bruce MC USA, Chief Health Officer of the Panama Canal Company and President of the Medical Society, will act as keynote speaker at the invocation ceremonies, which will include addresses by the President of the Republic of Panama and by the Governor of the Panama Canal Zone.

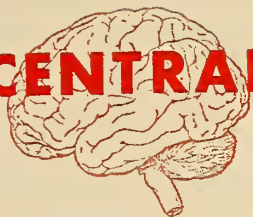
Registration will take place at the Hotel El Panama at 9:00 A.M. April 2nd, the registration fee being \$5.00. The program will be wide in scope, and on the order of a state medical convention in the United States. Speakers will be from North and South America, and all papers will be translated into both English and Spanish. For further information write to Dr. William T. Bailey, Chairman of the Convention Executive Committee. Box O, Ancon, C. Z.

The faculty will include Dr. William F. Riehnhoff Jr., Dr. Hawley H. Seiler, Dr. Chester W. Emmons, Dr. Irving J. Selikoff, Dr. R. B. Turnbull, Colonel Joseph R. Schaeffer, MC, USA, Colonel James E. Graham MC, USA, Lieutenant Colonel Robert Pillsbury, MC, USA, Dr. William A. Sodeman, Dr. Carl Johnson, Colonel Victor Hirshman, MC, USA, Dr. Joseph W. Kelso, Dr. J. A. Del Regato, Dr. Edward Shanbrom, Dr. Frank Stelling, Dr. Meredith F. Campbell, and Dr. Harold W. Brown.

STANFORD POSTGRADUATE CONFERENCE IN SURGERY

STANFORD University School of Medicine will present a Postgraduate Conference in Surgery from March 18 through March 22, 1957. Registration is unlimited and will be open to Doctors with an M.D. Degree.

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| Potassium guaiacol sulfonate | 70.0 mg. |
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| Menthol | 1.0 mg. |
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Dosage: one tablet three times a day beginning three to five days before onset of menstruation.

SEARLE

Patients with common surgical problems will be presented. The surgical anatomy of the region will be demonstrated while the patient is taken to surgery. After the anatomical demonstration the operation will be broadcast in black and white television to the audience. The audience may question the surgeon through the monitor and director of the course, Dr. Roy B. Cohn, Associate Professor of Surgery.

Programs and further information may be obtained from the Office of the Dean, Stanford University School of Medicine, 2398 Sacramento Street, San Francisco 15, California.

BAHAMAS MEDICAL CONFERENCE

AT THE last monthly meeting of the Bahamas Branch of the British Medical Association in Nassau on January 3rd, the holding of another Bahamas Conference during the week after Easter, April 23rd to 30th, 1957, was approved.

This next Conference will be held at the British Colonial Hotel and the Princess Margaret Hospital in Nassau. On weekdays, lectures will be given from 9:30 to 10:00 a.m. and 5:30 to 7:00 p.m. There will also be two evening lectures and two meetings at the hospital. As last De-

cember, there will also be two evening social gatherings.

The British Colonial Hotel has offered special rates for the participants of this Conference and their wives: Modified American Plan. Two persons in one room, \$30.00 for room, breakfast and dinner per day, for two; One person in one room, \$20.00 for room, breakfast and dinner, per day, for one.

Hotel reservations should be made as early as possible by writing (airmail ten cents postage from the United States or Canada) DIRECTLY to Mr. Robert K. Holiday, Reservations Manager, British Colonial Hotel, Nassau, Bahamas, and by sending at the same time the registration fee of \$75.00.

Thirtieth Annual SPRING CONGRESS

in

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.. Laryngoscopy — Facio-maxillary Surgery ..
.. .. Bronchoscopy and Esophagoscopy

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Woman's AUXILIARY

27th ANNUAL CONVENTION YUMA, ARIZONA

WE ARE making special plans for the 27th Annual Convention of the Woman's Auxiliary to the Arizona Medical Association to be held in Yuma April 10-13, and hope you are planning to attend.

We shall be privileged to have our National President, Mrs. Robert Flanders of Manchester, New Hampshire in attendance and I hope you will have the pleasure of meeting her and hearing her talk to the auxiliary at that time.

The following tentative program has been announced by Mrs. John Stanley of Yuma, Convention Chairman:

Wednesday April 10 10 A.M. to 4 P.M.
Registration, Star Dust Lobby.

10:00 A.M. — Student Nurse Loan Fund Committee meeting and Nominating Committee meeting.

12:30 P.M. — Pre-Convention Board meeting and luncheon.

3:00 P.M. — School of instruction for incoming officers.

Thursday, April 11 — 9:30 A.M. — General Business Session of Auxiliary, Flamingo Dining Room.

12:30 P. M. — Luncheon at Yuma Country Club, honoring Mrs. Robert Flanders.

2:00 P. M. — Ladies' Golf Tournament.

Friday, April 12 — 10:30 A.M. — All Western Brunch, Yuma Country Club.

2:00 P. M. Ladies' Golf Tournament climaxed by the dinner dance in the evening.

So bring your squaw dress and come to Convention! Yuma County Woman's Auxiliary President, Mrs. Abe Podolsky, and the Yuma County members will be hosts for the guests from other counties.

As your President, I cordially invite and urge you to come to the State Convention "On The Border."

Mrs. Oscar W. Thoeny, President

TODAY'S HEALTH

FOR THE second time in as many years, Today's Health Magazine will go around the world on \$40.00. I feel that our progress is worthy of mention.

In 1954 when Arizona was awarded first prize in the magazine national sales competition, it was the dream of Mrs. James Soderstrom of Whipple to spread good medical tidings as well as public relations.

Through names of missionaries suggested by county auxiliaries and other groups, subscriptions were sent to far away places. The response was heart warming.

In 1955 the county societies had the pleasure of sending their own subscriptions to their special friends. One of the other states having won the prize had the opportunity to carry out their own plan to further Today's Health.

But again in 1956 we won first place and so will continue the good work started by Mrs. Soderstrom and send our health message to distant lands.

One response closer to me than perhaps others is from the Leper Colony in the Philippines.

My local Campfire group have been sending Today's Health to the group of thirty-six Campfire girls in the colony. From their leader comes the following letter.

"In the name of all my Campfire girls I thank you for the subscriptions of the Today's Health magazine, which gives many lessons pertaining to our health. Because of this magazine, many of my ignorant girls are becoming acquainted of themselves, and they learn much of their health habits.

"I thank you from the bottom of my heart that you remember us always."

It is difficult for us living so closely to medicine to imagine what such a magazine as Today's Health can and does mean to people in remote places.

But just as interesting to me is the response of our own people who have been contacted by our county chairman and are now taking the Today's Health magazine. I know of no one who is not delighted and grateful to have

authentic medical information in layman's language. All of this is very gratifying to the group working closely with the magazine.

May I mention here that Yuma County having won \$25.00 as second place in national sales in 1956, will use the money in some way to further the Today's Health cause.

As a suggestion to all of you who may read this, remember a subscription to Today's Health is always well received.

Our goal will be accomplished if our magazine contributions have spread a little understanding, good will and good health to far away places.

Mrs. William A. Phillips
Chairman, Today's Health

TODAY'S HEALTH

It would seem that the members of our society are just as resistant to the magazine Today's Health as they used to be toward Hygeia. In that day it was said this opposition was directed more against the editor, M. F., than any other factor, but he is long gone, the name, format and contents have been changed, and still there is a profound lack of interest in this fine propaganda medium.

It is agreed that we physicians have not been able to get our message across to the general public and their representatives in the federal and state legislatures. Well, maybe all do not agree with this statement, but the results would indicate that it is 99 44/100% true. No longer can our officers and agents walk into a legislative committee and get the laws and actions that we request. Some yes, but many, no.

The individual physician is still well liked and respected by his patients, but physicians as a group are not liked by the man in the street, the voter. This has been confirmed by local and national polls too many times to be denied. And we are doing so little about it.

There are many reasons for this and complacency and lethargy are not the most important ones. Time is a factor and strange as it may seem, there is a lack of knowledge as to the basic issues. Some physicians believe their job is just to practice medicine and take care of the sick. Some of these have gone so far as to state that they do not care too much about the economic and political atmosphere under which

they have to work as long as they can work. The latter may have no interest in any kind of propaganda medium, but most of the rest would if they thought there was something that would be effective.

Why is it that Today's Health has never been given the consideration it deserves as this agent? It is written for the layman. It not only explains diseases and treatment in easily understood terms, but there is always something in every issue about the free and independent practice of medicine and its advantages to the general public and the health of the nation.

Some physicians have not wanted the magazine in their reception rooms because sometimes the opinions of the author disagree with his opinions and this leads to some patient-physician conflicts. Could be this is a valid consideration.

But let's think in terms of general public education. Where may we do the most good? One thinks at once of the youngsters of the nation, the future voters. How many have ever thought in terms of our schools? Teachers are very anxious to get the magazine because it is so valuable in teaching hygiene, public health and preventive medicine.

It would cost so little for each physician to buy one subscription for a school library, public, parochial, grade or high. Maybe two or three for the latter. If this were done, we would be getting our official health message across to all the kids who are going to grow up and have their own ideas, concepts and prejudices the rest of their lives. They are going to hear lots of adverse propaganda, be exposed to lots of reading matter that blasts us and engage in lots of talk about health and doctors.

If they know the answers, they could be a big help. If they don't, they are apt to believe all kinds of wild rumors and untruths.

How about it? Why not spend a couple of bucks to win some future friends?

G. Wilse Robinson, Jr.

CLASSICS IN ARTERIAL HYPERTENSION by Arthur Ruskin, M.D. 358 pages. (1956) Thomas. \$9.50.

Searching through the old and new literature of many countries, the writer has translated and arranged chronologically the classical essays on hypertension, heretofore inaccessible. This will be an exciting addition to the libraries of historians and readers.

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| Thiamine mononitrate | 1.0 mg. |
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Arizona Medicine

Journal of

ARIZONA MEDICAL ASSOCIATION



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ARIZONA MEDICINE

Journal of ARIZONA MEDICAL ASSOCIATION

VOL. 14, NO. 4



APRIL, 1957

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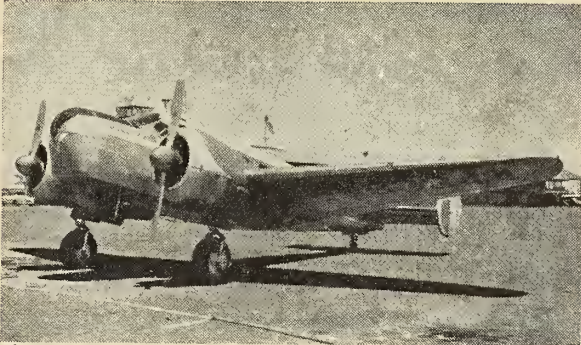
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Original ARTICLES

*Medical Practice and Statistics**

By Vergil N. Slee, M.D.
Ann Arbor, Michigan

FOR YEARS we have all listened to the statistical reports of hospitals as regular features of the medical staff meetings. About six years ago, I developed more than a casual interest in these reports and in general problems of hospital statistics.

When one takes a critical look at the monthly statistical report of a hospital he begins to ask questions about the accuracy of the report, about its meaning, and what is more important, about its value. Presumably the report is issued for the purpose of telling the medical staff of the hospital whether or not its practice of medicine meets acceptable standards. Traditional standards, such as the 4 percent net death rate, may be found in any of the books on hospital administration and medical record keeping.

The interesting thing about these standards is that one can refer to earlier editions of the various textbooks for twenty or thirty years back and find the same standards promulgated year after year. This is immediately disturbing, since we like to think that we are not practicing the same type of medicine today that we did thirty years ago.

A rather obvious solution to this problem is to compare the statistics, not with the thirty-year old textbook, but with reports from other similar hospitals for the same periods in history, when physicians were taking care of patients

with the same armamentaria and under the same influences.

So in 1950, we began to compare the regular statistical reports of a small group of some fifteen hospitals in Southwestern Michigan. To do this we adopted a system which had been started in Rochester, New York, by Paul Lembecke, M.D.

As soon as we had the first six months of data and comparisons at hand we knew that we had struck pay dirt. One day a friend who is an undertaker, and whose son was going to embalming school, said that he had heard that we had some information on a number of hospitals in our general territory in Michigan. He wondered whether or not we could help him solve the problem about the future of his son, the student mortician. The father didn't know whether he should expand his own firm to make room for the son in the business, or if it would be wiser to set up another firm in one of the neighboring cities.

Instead of looking at the deaths in the various hospitals, we took a look at another routine item from the monthly report, namely the percentage of patients reported as recovered. Although death is not the exact opposite of recovery, the implication is rather strong that in the community where patients don't recover, the embalmer will find a more fertile field.

In Illustration 1*, we see a gratifying confirmation of our hunch that we could get useful

*A speech presented at the Washington University Medical Alumni Association Annual Clinics Session, St. Louis, Missouri, 1 June 1956. Doctor Slee is Director of the Commission on Professional and Hospital Activities, Inc., First National Building, Ann Arbor, Michigan. The Commission is a non-profit corporation sponsored by the American College of Physicians, American College of Surgeons, American Hospital Association, Southwestern Michigan Hospital Council, and partially supported by a grant from the W. K. Kellogg Foundation.

*Illustrations 1, 2, 4, 5 and 6 first appeared in the *Annals of Internal Medicine*, 44:1, January 1956, page 144, in a paper by Eisele, Slee, and Hoffmann, "Can the Practice of Internal Medicine be Evaluated?"

data from hospital statistics. Obviously it would be wiser to set up shop where the percentage of recovered patients is low, that is, in the neighborhood of hospital No. 14 than it would be where the percentage is as high as it seems to be in hospital No. 1.

We were not entirely satisfied, however, since the data seemed to be a bit crude. So we looked at the performance of individual doctors from hospital No. 13 which generally has a pretty desirable recovery rate, from the standpoint of an undertaker, that is, and Illustration 2 was the result. Obviously, a man could make a grievous error even if he established the business in this city and then made the mistake of becoming friendly with doctors 1 and 2, when he probably could just as well have joined a different service club and made friends with doctors 18 and 19.

Things like this shook our faith in customary hospital statistics. When we looked into the sources of such information, we found that they were mixtures of the honest opinions of conscientious doctors, the off-hand judgments of physicians given at the insistence of a record librarian who *had* to have the information to complete a report, and finally, the decisions made by the well-meaning medical record librarian who didn't want to bother the doctor.

Of course, this particular hospital statistic appears to us to be of no value, and in our work we have thrown it out completely. But we still thought that the general idea behind the computations of various rates and their comparisons was sound. We didn't want to be guilty of throwing the baby out with the bath.

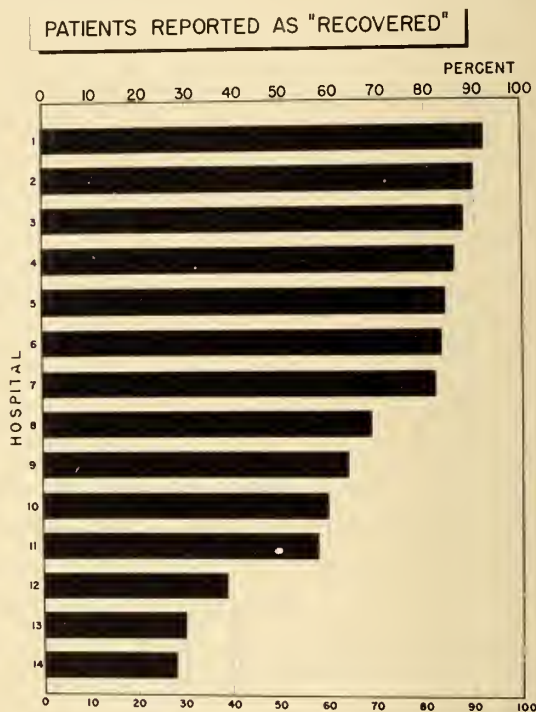
So we proposed certain changes in our approach to this whole problem as follows:

- 1) We would deal with information on individual patients, rather than on hospitals.
- 2) We would employ a statistician to put the work on a professional basis.
- 3) We would set up a data processing and statistical center to serve the group of hospitals.
- 4) We would use IBM machines to process the data.

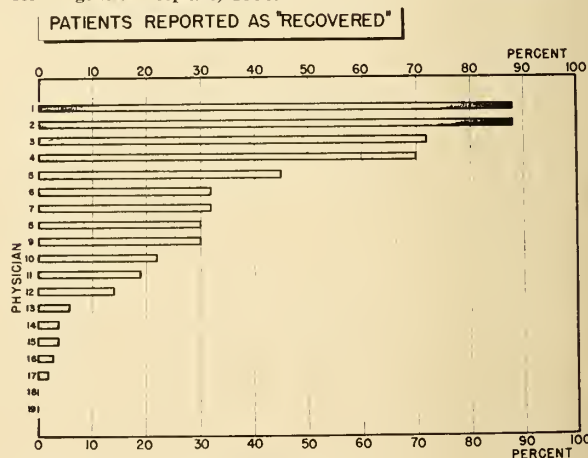
Crude though our early attempts had been, they had proved the impossibility of using hand methods for eliciting useful statistical information from clinical records. Consequently, we were able to obtain support for the new system

from the W. K. Kellogg Foundation who had helped us with our original program. About three and a half years ago we put the study on a modern basis.

Instead of statistical reports from each of our participating hospitals, we are furnished with a brief abstract of each clinical record. These are prepared by the record librarians. They contain, as nearly as possible, only factual material, with no opinions from the record librarians, or anybody else except the physicians taking care of the cases. From this abstract, or code sheet, we make an IBM card which we use to prepare monthly statistical reports for each hospital, to



1. Per cent of patients reported as "recovered," by hospital, for 14 general hospitals, 1953.



2. Per cent of patients reported as "recovered," by physician, for physicians of hospital 13 (Illustration 1).

prepare the disease, operation, physician and surgeon indexes for each hospital, and statistical studies comparing all hospitals.

With the new system we found that the differences between hospitals and physicians showed up even more clearly than they had before, and with more meaning, and we found that it was valuable to have such information. Following are illustrations of some of the things we have turned up in the last two or three years.

For example, we asked our statistical center the question: "Are there differences in the rates of complications in delivery patients among the hospitals?" Illustration 3 presents the answer. In hospital No. 15 nearly 35 percent of all the deliveries were reported as complicated deliveries whereas in hospital No. 1 only 1.6 percent were so reported. We would be very surprised if the problems of bearing children were this different in these various communities. So here, as in many instances, the statistical comparison furnished an answer of sorts which intrigued us and raised questions as to the real facts.

Investigation showed that there were at least two factors involved. One was that doctors varied in their definitions of prolonged labor so that one might say that any labor which went over 12 hours was prolonged while another would call it prolonged after 24 hours had elapsed. This failure to have an acceptable definition and to use the same terminology was introducing a bias into the data.

But another interesting thing was also involved which had to do with the collection of data. We found that the medical record librarians in hospitals 14 and 15 had gotten it into their heads that the use of low forceps indicated that the labor was prolonged or that there was some disproportion, and also that an episiotomy was interpreted as a laceration. Discussion among the medical staffs led to some better agreement on definitions and the medical record librarians were persuaded to code from the diagnoses as expressed by the physicians rather than their own interpretations.

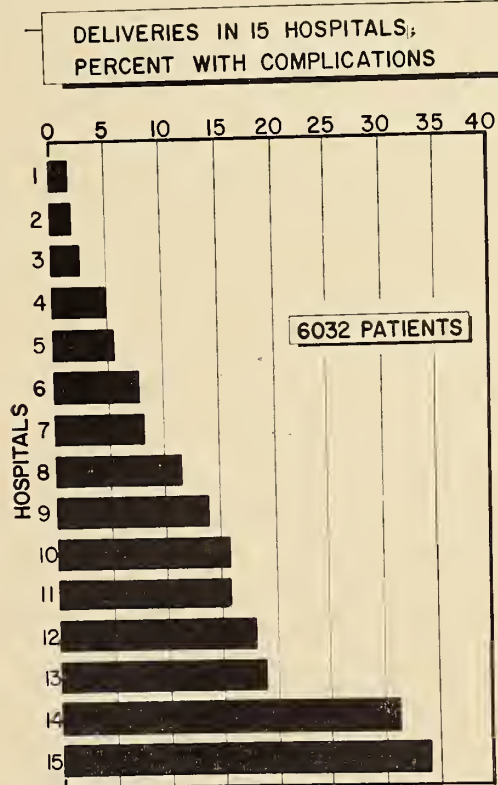
In another instance, we started with the idea that anyone with an acute lower respiratory infection who was sick enough to be hospitalized for treatment of that condition was quite likely to have a chest x-ray in the hospital. We actually

found that about 76 percent of all such patients did, but in one hospital 95 percent of these patients were x-rayed while in another only 45 percent were x-rayed. Illustration 4 shows the distribution.

When we looked at the performance of individual physicians, shown in Illustration 5, we found that for several physicians all patients were x-rayed, while at the other end of the scale, there was one physician who x-rayed only one out of every four patients he treated. It was suggested that the patients who were not x-rayed might represent infants, or patients in extremis who died before they could be x-rayed. Review of the cases did not confirm either of these suspicions.

In one hospital with a rather low percentage the staff felt that the chart did not correctly describe their performance, so they investigated and found that a large proportion of x-ray reports were never getting onto the clinical records. When this was corrected not only was the percentage better, but a serious defect in the hospital administration was eliminated.

In another hospital the report led to a good deal of discussion about when chest x-rays were



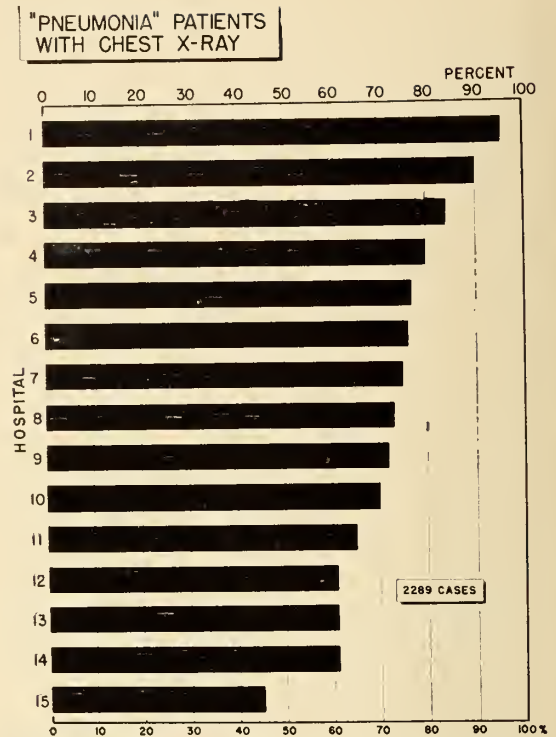
3. Per cent of delivery patients reported as having complicated deliveries by hospital, for 15 general hospitals, July-December 1954.

indicated. Some of the comments were that if a man required a chest x-ray to diagnose every pneumonia, he wasn't a very good doctor. Others championed the idea that every patient suspected of pneumonia should have one chest x-ray, and if the diagnosis was established, a second x-ray should be taken later to determine whether resolution had taken place and to be sure no other disease was obscured by the inflammation. No conclusions were reached at the staff meeting but as you will note from Illustration 6, for the next year, at least, the chest x-ray percentage went up a little over 10 percent. This might mean that there was a tendency among the physicians to follow the leader and try to achieve a higher score, or it might mean that they were giving a little more serious attention to the care the patients were getting.

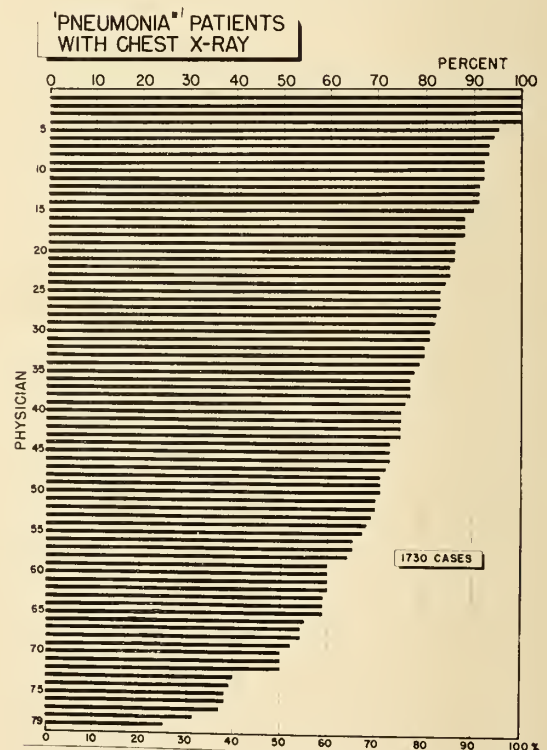
In the pneumonia illustration we have shown first, a problem in hospital administration and second, some real differences in medical practice, in contrast with the delivery illustration in which we detected some problems in medical terminology as well as some in record collecting.

Illustration 7 presents the average ages of the women having hysterectomies in the various hospitals. The overall average age was about 43 years. However, in one hospital the average was a little over 50 years whereas in another hospital of about the same size, the average age was just over 37 years. The latter hospital accounted for about $\frac{1}{3}$ of the hysterectomies but about only $\frac{1}{6}$ of the total discharges. So far as we can determine, this illustrates a definite difference in medical philosophy as to the indications for hysterectomy.

Illustration 8 presents pathologists' reports in hysterectomies. In this figure are shown some 1,190 hysterectomies in the period of one year for which tissue reports are available from nine pathologists serving 20 hospitals. Pathologist No. 1 reported unequivocal pathological indications for the surgery in 98 percent of the cases, while pathologist No. 9, at the extreme, reported such findings in only 44 percent of the cases. Or, to read the rest of the graph, in those cases served by pathologist No. 1, indications for surgery were purely clinical in only about two percent of the cases, while for pathologist No. 9, the clinician bore the responsibility for over half of the cases. Here, again, we



4. Per cent of patients with acute lower respiratory infections ("pneumonia") having chest x-ray during hospitalization, by hospital, for 15 general hospitals, January 1953 through June 1954.



5. Per cent of patients with acute lower respiratory infections ("pneumonia") having chest x-ray during hospitalization, by physicians, for physicians treating 10 or more "pneumonia" patients in 15 general hospitals, January 1953 through June 1954.

suspect that this represents a difference in philosophy, and to some extent terminology, on the part of the pathologist.

Illustration 9 is taken from acute appendicitis. We wondered if the pathologists serving our participating hospitals were reporting complications of appendicitis in roughly the same proportions of cases. By "complications" we meant peritonitis or perforation. We knew of no reason to suspect that there would be large differences in the occurrence of perforation or peritonitis among the patients served by these different hospitals. Commonly, the surgeon waits for the pathology report before writing the final diagnosis on the clinical record. Therefore, we felt that the final diagnoses in these appendectomy cases would probably reflect the pathologist's diagnoses, particularly with reference to peritonitis and, to some extent, microscopic perforation. It may be seen that the occurrence of "complicated" appendicitis varied from 6 percent for one group to 33 percent in another group. This we strongly suspected was the result of differences in terminology and description on the part of pathologists.

This assumption would be valid, of course, only if the surgeon really is influenced by the tissue report. One way to measure this was to look up the cases reported by the surgeons as acute appendicitis in which the pathologist reported normal tissue. The findings are shown in Illustration 10. This is more striking than the preceding.

In only three hospitals did the surgeons take the pathologists' diagnosis of normal tissue as final, and report cases as acute appendicitis ONLY when the tissue was reported diseased. In contrast, note that in three hospitals, 1, 2, and A, 30 percent or more of the appendectomies carried a diagnosis of acute appendicitis in the face of normal tissue reported by the pathologist. If the surgeon were entering his final diagnosis on the basis of the tissue, such cases should carry a diagnosis of some other pathological condition, or right lower quadrant pain of undetermined cause. What this chart then shows us is that the pathologist may not be as influential as we generally believe.

Here again, instead of answering questions with any degree of finality, we have opened up several new ones for investigation, since this type of problem will yield to a direct

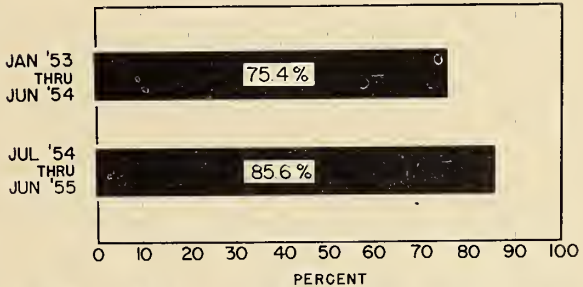
frontal attack.

In view of the present sensitivity about lawsuits, workmen's compensation and insurance, one expects to find every fracture and dislocation, and most sprains and concussions x-rayed in the case of hospitalized patients.

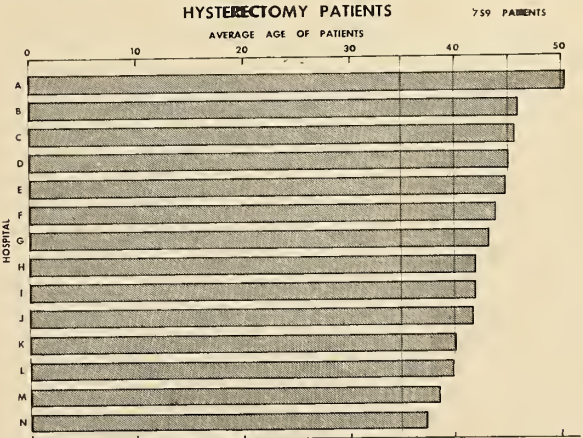
As can be seen from Illustration 11, a surprising 12 percent of all fractures were not x-rayed; 12.9 percent of dislocations, and 21.1 percent of head injuries (of which over one-half were concussions) were not x-rayed. We believe this represents an indication of medical practice and cannot be explained on the basis of differences in patients.

One particular area of medical practice in which great differences in philosophy appear is the use of whole blood transfusions. We have looked at this therapy in a number of medical and surgical conditions for a number of hospitals. A hospital which uses a lot of blood in deliveries will also use a lot of blood in medical conditions and in various types of surgery. A hospital which uses very little blood in one

"PNEUMONIA" PATIENTS WITH CHEST X-RAY



6. Comparison of per cent of patients with acute lower respiratory infections ("pneumonia") x-rayed before data from Illustrations 4 and 5 were displayed to medical staff (January 1953 through June 1954) and after (July 1954 through June 1955).



7. Average age of hysterectomy patients, by hospital, for 14 general hospitals, 1953.

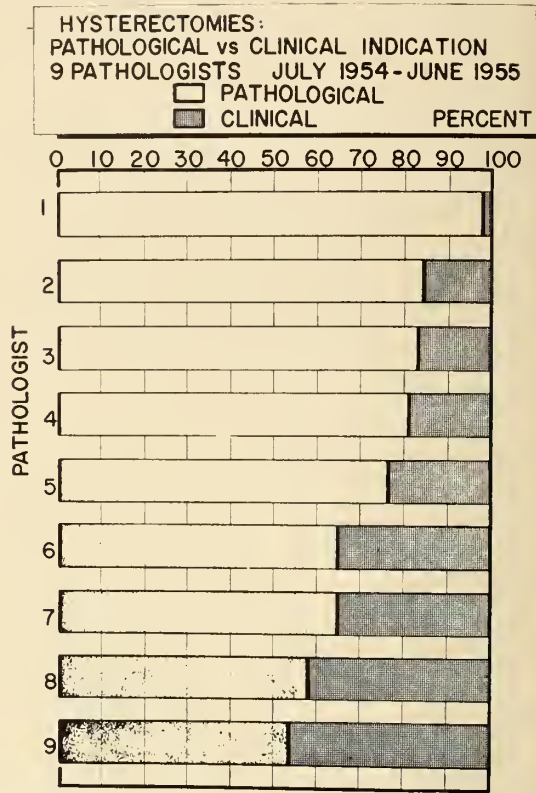
will use little blood in others.

The variation actually exhibited can be seen in Illustration 12 concerning the use of whole blood in patients who had gall bladder surgery. You will note that the range is from no patients receiving blood to 75 percent. Although this is a fairly small group of cases, I assure you that the same phenomenon has been observed in other conditions and in much larger series. The reason that we show this particular figure is that these gall bladder cases were "audited" by the medical staffs of the same hospitals in which the surgery was performed. This was a portion of the medical audit research program in which we are collaborating with the American College of Surgeons. In only three instances in the 233 cases was the use of blood criticized. Apparently each medical staff is firm in its beliefs as to when it is appropriate to use blood.

It would seem that here is an area in which investigation of the facts could help establish a reasonably rational basis for the use of blood, somewhere between the philosophy which holds that a blood transfusion is an extremely hazardous procedure to be used only as a last resort, and that which regards blood as the modern-day successor to sulphur and molasses.

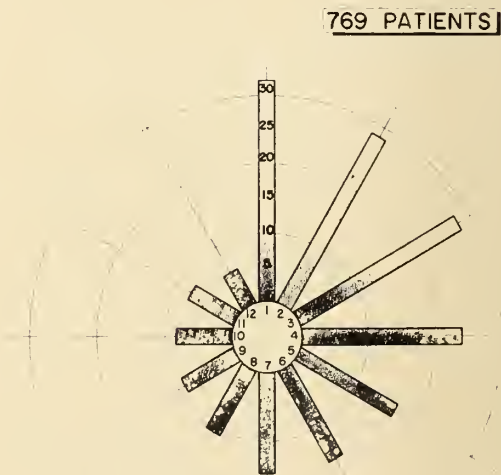
In addition to detecting differences in medical terminology, in record keeping, in hospital administrative practices, in methods of collection of data, and in medical practices there are other things which can be turned up by a statistical approach.

We recently reviewed the treatment of young children with respiratory infections. Among other things, we had committees of the medical staffs of the participating hospitals record the admitting temperatures of the infants. There were some 821 patients involved and in 67 instances no admitting temperature was recorded at all. The 754 instances in which there was a temperature recorded are plotted in Illustration 13. There are some interesting things about this chart. First, far more temperatures are recorded on full degrees than are recorded for tenths of a degree. Second, and more interesting, note that there is a far greater preference for even-numbered degrees than there is for odd-numbered degrees. We suspect that this is evidence that nurses and nurses' aides can't read thermometers. For the comment "who cares?" we believe that the principle of being faithful



8. Proportion of tissue reports recording pathological versus clinical indications for hysterectomy for 9 pathologists, July 1954 through June 1955 (1190 hysterectomies).

PERCENT OF PATIENTS WITH
"COMPLICATED" APPENDICITIS
FOR 12 PATHOLOGISTS



9. Per cent of primary appendectomy patients with a final diagnosis of "complicated" appendicitis (with peritonitis or perforation) for 12 pathologists, July 1954 through June 1955.

in a few things and also being faithful in many applies. We would like to have our help as meticulous in reading thermometers as in measuring doses of insulin.

As to the medical importance of a 2° vs a 3° fever, we agree that it isn't very important, once the fact has been established that a temperature elevation exists. The error probably doesn't influence treatment much in ranges above 100°. But if the question to be determined by taking the temperature is whether or not there is any elevation, so that we are reading in the range of approximately 98.6°, a mistake of one degree may influence our care of the patient considerably.

For the past two years one of the items which the record librarian has routinely reported to us on all patients is the admitting hemoglobin of each patient. Last fall we tallied up these admitting hemoglobins and found that the over-all hemoglobin average for all hospitals remained constant within 0.2 Gm, from month to month, for a six-month period. The most constant average maintained by any single hospital showed a 0.3 Gram range. At the other end of the scale was a hospital in which the range between highest and lowest month was 1.6 Gram in the six-months' period. These are shown in Illustration 14.

There also was an interesting difference in the over-all six-months' average hemoglobin from hospital to hospital as found in Illustration 15. As can be seen, these differences are not artifacts produced by small numbers. Some 23,000 determinations went into the total study.

In the cases of hospitals showing the wide swings of hemoglobin level we looked a little more closely at the data. In hospital 5, shown in Illustration 16, we were impressed by the jump in hemoglobin level which occurred in November. When we asked the pathologist about this he stated that this was the time at which they had recalibrated their colorimeter.

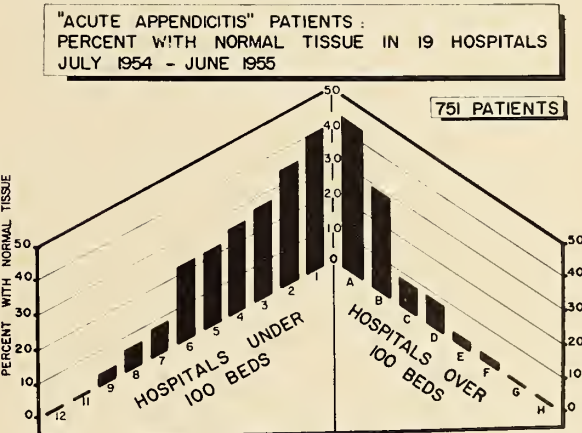
In Hospital 16, also shown in Illustration 16, the trend was in the other direction, a steadily decreasing hemoglobin level from the initial 14.2 Grams down to about 12.8. This was quite disturbing to the medical staff who had considerable faith in their laboratory, and so it was investigated rather carefully. Here it was found that the record librarian had neglected to supply to us all the data during the first

two months, and in addition she had through some unknown process selected primarily patients with high hemoglobin levels to report during the same period.

In both of these instances the changes in hemoglobin did not represent changes in the patient population of the hospital or their medical conditions, but rather problems in the laboratory and in the record room.

A common initial reaction to this sort of data on the part of the clinician is to shrug it off. He is used to seeing fluctuations of a Gram or more reported from day to day on individual patients, so when he sees that an average for one hospital is 2.0 Grams higher than an average for another hospital, he is not immediately impressed with any practical value of the information. Such information, however, is of real importance.

Robert G. Hoffmann, Ph.D., our statistician, while working on his doctorate on control chart



10. Per cent of primary appendectomy patients with a final diagnosis of acute appendicitis for whom a normal tissue was reported by hospital, for 19 general hospitals, July 1954 through June 1955.

| INJURY GROUP | NUMBER OF CASES | NUMBER WITHOUT X-RAY | PERCENT WITHOUT X-RAY |
|--|-----------------|----------------------|-----------------------|
| Fracture-Skull, Spine, Trunk *N800 - N809 | 565 | 99 | 17. 5% |
| Fracture-Upper Limb N810 - N819 | 622 | 71 | 11. 4% |
| Fracture-Lower Limb N820 - N829 | 746 | 61 | 8. 2% |
| Dislocations without fracture N830 - N839 | 116 | 15 | 12. 9% |
| Sprains & Strains N840 - N849 | 283 | 63 | 22. 2% |
| Head Injury-Except Fracture N850 - N856 | 467 | 99 | 21. 1% |
| TOTAL | 2, 799 | 408 | 14. 6% |

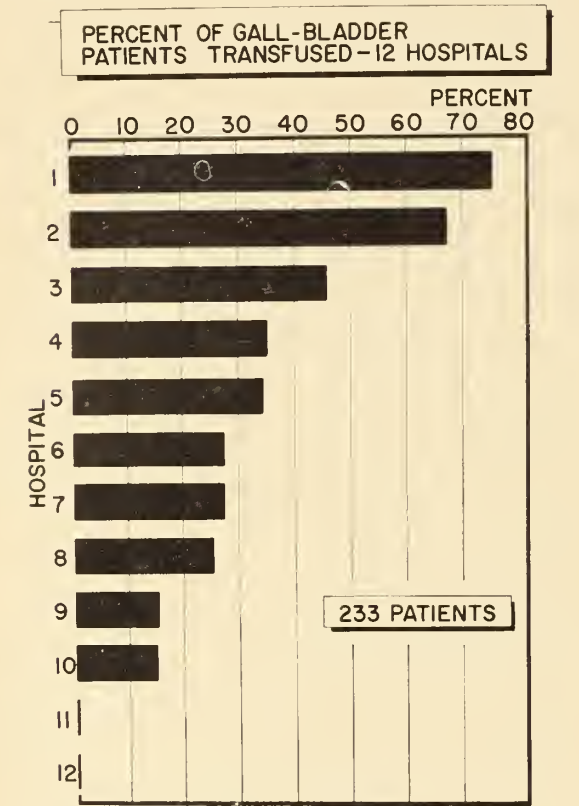
*International Statistical Classification Code

11. X-rays in selected trauma: Use of diagnostic x-rays in 2,799 hospitalized trauma patients in general hospitals, 1955.

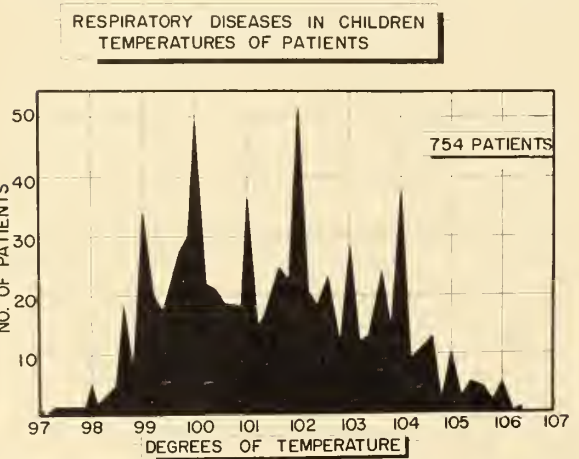
methods in clinical laboratories, studied two hospitals literally across the street from each other,

taking care of the same community's patients, and staffed by the same physicians. Illustration 17 presents the data from these two hospitals.

In Hospital A the initial hemoglobin average was 11.1 Grams, whereas, in Hospital B across



12. Per cent of gall bladder patients transfused, by hospital, for 12 general hospitals, 1954.



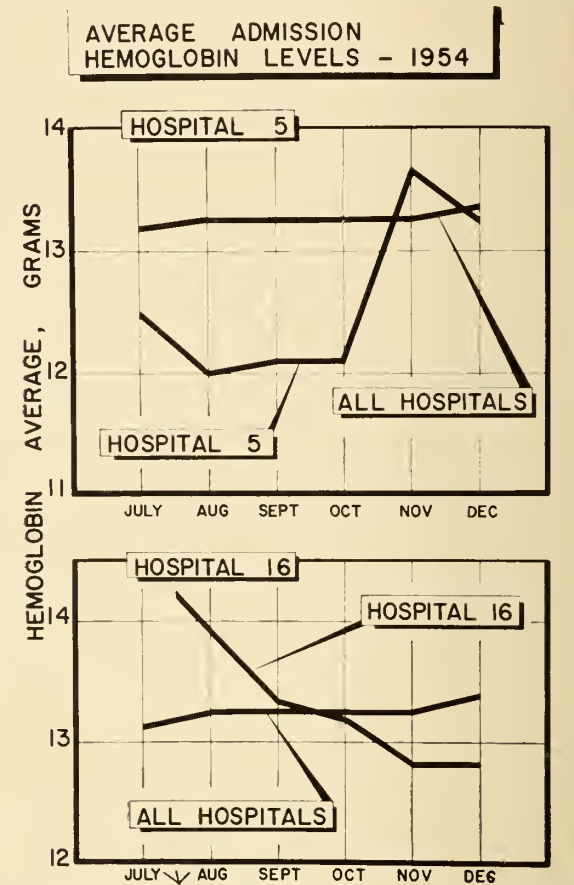
13. Frequency distribution of admitting temperatures of 754 children hospitalized with acute respiratory infections as reported from 11 general hospitals, July through December 1954.

| Hospital | Monthly averages of admission hemoglobins, in Grams | | | Tests per month |
|----------|---|--------------|---------------------------|-----------------|
| | Highest month | Lowest month | Range of monthly averages | |
| 1 | 13.3 | 13.0 | 0.3 | 162 |
| 5 | 13.6 | 12.0 | 1.6 | 347 |

14. Highest and lowest monthly averages of admission hemoglobins for 2 general hospitals, July through December 1954.

| Hospital | Six-Months Average | Total Tests |
|----------|--------------------|-------------|
| 9 | 11.6 Gm. | 1056 |
| 14 | 14.1 Gm. | 876 |

15. Six-months' averages of admission hemoglobin levels for hospitals showing highest and lowest overall averages for the period July through December 1954.



16. Monthly averages of admission hemoglobins for 2 general hospitals as compared with monthly averages for all hospitals, July through December 1954.

| HEMOGLOBIN AVERAGES FOR TWO HOSPITALS | | | AVERAGE PATIENTS TRANSFUSED PER DAY |
|---------------------------------------|------------|------------|-------------------------------------|
| | Hospital A | Hospital B | Hospital A |
| Initial Period | 11.1 Gm. | 13.3 Gm. | 5.2 |
| After Restandardization | 14.9 Gm. | 12.8 Gm. | 2.4 |
| Reduction in Transfusions | | | 2.8 |

2.8 x 365 = 1,022 fewer patients per year transfused after restandardization.

17. Monthly averages of admission hemoglobins for 2 general hospitals before and after restandardization of the procedure, and average patients transfused per day for the same periods (no change in patient load in the hospital).

the street, at the same time the average was 13.3 Grams. When this fact came to light, an investigation was made and the instruments were re-standardized. In Hospital A, the post-standardization average was 14.9 Grams, whereas in Hospital B, it was 12.8 Grams. After the re-standardization the laboratory may not have given absolutely precise hemoglobin reports either, but the point of presenting this data is found in the final column. During the period before re-standardization of the equipment, in Hospital A an average of 5.2 patients per day received blood transfusions. After re-standardization an average of 2.4 patients per day received blood transfusions. Multiplied out, this means that in the course of a year, approximately 1,000 fewer patients received blood transfusions when the hemoglobin determination had been re-standardized to give every patient approximately 3.8 Grams more of hemoglobin.

Here, as in the illustration with the temperature readings, the importance of the error is not felt in the definitely abnormal range. The error is of serious import when it occurs at or near the critical point which the physician has selected as determining his course of action. In the temperature reading, the question is "Has the patient a fever?" In the hemoglobin reading, the question may be "Does the patient need a transfusion?" Here, the error is one which automatically and secretly adds to or subtracts from the true hemoglobin level of every patient an error in the amount of the deviation from the standard.

In a chemical titration, one or two drops are not very important except at the end-point.

Some tangible changes seem to have occurred in the three-year period the program has been under way. There have been some improvements in nomenclature in the participating hospitals. In most instances medical records contain more information than they did three years ago. Records are being completed more rapidly because the staffs want to get information back. Some standardization of medical record room procedures and functions has resulted. Hospitals have had facts to use in planning their facilities. A number of medical staffs have used statistical studies incorporating their own data as the bases for medical staff discussion. Finally, it appears that there have been some changes in medical practice.

The fact that this program is aimed at providing help for physicians has secured for it the interest and support of the American College of Physicians, American College of Surgeons, and American Hospital Association which have joined with the original sponsor of the program, the Southwestern Michigan Hospital Council in forming a non-profit corporation of national scope to furnish medical and hospital statistical services, and also to continue research in methods and with the data. The program which started in 1953 with 15 hospitals discharging 50,000 patients per year now serves 32 hospitals discharging 225,000 patients per year.* It should be self-supporting when it grows to approximately four times its present volume. For interim support, a fourth grant has been obtained from the W. K. Kellogg Foundation.

So far, the work has been at a rather elementary level, and a good deal of attention has naturally been devoted to procedure and detail. As these hurdles are passed we expect to increase the amount of medically useful information available. Data such as I have described today usually raise questions more frequently than they furnish answers, but the stage has been set for further investigations, and a mechanism for facilitating such studies has been set up in the data processing and statistical organization.

Conclusions:

1. Medical and hospital statistics can be useful.
2. A data processing and statistical center serving a number of hospitals is practical. Medical record room procedures and statistical data are standardized, permitting comparisons, which are in turn possible because the data is fed into a central point where it can be analyzed.
3. In addition, there is usually an actual reduction in the cost of operating the medical record room of the hospital over and above the amount the hospital must pay for the services.
4. Another avenue of research is becoming more widely practicable: that of statistical analysis of the wealth of clinical information in hospital charts. Facts, the laboratory approach, may further displace armchair speculation and impressions. (ED. NOTE: SEE PAGE 205.)

*As of December 1956, the Professional Activity Study serves 50 hospitals in 13 states with 386,000 patients discharged per year.

*Adrenocortical Failure Following Long-Term Steroid Therapy**

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IN THE few years that the corticosteroids have been available to clinical medicine, many reports of the successes in various diseases have appeared. However, reports of failures with the use of these drugs are infrequent. Only lately have more voices been heard advising the medical profession that these medications are not miracle drugs, but are to be considered as possibly lethal drugs and certainly not innocuous in their side-reactions.(1)

Following are three cases which illustrate the point that these drugs may produce death because of iatrogenic adrenocortical failure.

CASE NO. 1 (R29 909): This case was reported by Preuss, Fraser, and Bigford in the Journal of American Medical Association of August 23, 1952.(2) He was a 34-year-old white male. Onset of rheumatoid arthritis was in 1943 with deformity of multiple joints. He was started on Cortisone in November, 1950, and maintained on 50-mg. dosage daily. The patient was readmitted to the hospital on June 12, 1951, for cup arthroplasty of the right hip. For reasons not shown on the chart, Cortisone was discontinued when patient was admitted to the Surgical Service. On June 14, 1951, a cup arthroplasty of the right hip was performed by the Orthopedic Consultant. The surgical procedure itself was done easily; however, when the second transfusion during the operation was started, the patient developed shaking chills and the transfusion was stopped. Blood pressure remained good and on return to his bed the blood pressure was 110/70 mms. of Hg. However, shortly thereafter the blood pressure began to drop. The skin was dry, warm, and somewhat cyanotic. Temperature rose to 102° F. axillary. Patient was given Epinephrin, adrenal cortical extract, plasma, and whole blood. Patient never regained consciousness and died one hour and twenty minutes after being returned from the operating room.

PERTINENT AUTOPSY FINDINGS

1. Adrenal Glands: (Figure No. 1 — Gross Appearance 4X) Grossly cortex was less than 1 mm. thick. Microscopically there was marked atrophy of all layers of the cortex with markedly increased vacuolation of cortical cells. (Figure No. 2)
2. Pituitary Gland: Grossly and microscopically unremarkable.
3. Hemorrhage of recent origin grossly observed in lungs, peripancreatic tissues, subendocardium, and subarachnoid and white matter of brain.
4. Vascular System: Fibrinoid necrosis, small arteries and arterioles, seen microscopically.
5. Rheumatoid disease with generalized arthritis, mitral valvulitis

Cause of death was felt by the pathologist to be acute adrenal insufficiency. The surgeons attributed the death clinically to fat embolism.

CASE NO. 2 (R 30 242) was a 65-year-old white male. Onset of rheumatoid arthritis involving multiple joints was in September, 1950. In March and April, 1951, patient had several courses of Cortisone therapy with some relief of symptoms, but relapsed each time when the drug was stopped. On July 20, 1951, he was again started on Cortisone in dosages varying from 37.5 to 75 mg. daily. He was admitted to our hospital on August 7, 1951, and remained on this therapy. He also received occasional three-day courses of intravenous Corticotropin (ACTH) therapy. The last series of this given was from December 4 to 6, 1952, inclusive. He also received several blood transfusions and various antibiotics for an infection of the right shoulder. Two weeks prior to his death he developed a febrile episode which was felt to be due to a kidney infection. The response to Penicillin was good. However, the day before his death the fever again returned, the patient lapsed into coma, the fever rose to 108° F., and death followed on July 4, 1953.

*Presented at A.C.P. Arizona Regional Meeting, February 4, 1956.

**Chief of medical Service, Veterans Administration Hospital, Tucson, Arizona.

***Chief of Laboratory Service, Veterans Administration Hospital, Tucson, Arizona.

PERTINENT AUTOPSY FINDINGS

1. Adrenal Glands: Grossly these were diminished in size with very thin pale cortices, (Figure No. 3). Microscopically, there were tubule formation and atrophy of cortical cells. Fat stains revealed moderately good lipid content (Figure No. 4).

2. Pituitary Gland: No remarkable changes.

3. Lungs: Grossly a hemorrhagic moist cut surface was seen. Microscopically there were pulmonary edema and intra-alveolar hemorrhage.

4. Heart: Grossly there was marked myocardial hypertrophy of left ventricle and microscopically foci of myocardial scarring and coronary arteriosclerosis.

5. Kidneys: Gross and microscopic changes of arterial and arteriolonephrosclerosis were present.

6. Rheumatoid disease with generalized arthritis.

Pathologically there was insufficient evidence for a definitive cause of death or cause of the hyperthermia. Major pathologic diagnoses were hypertensive cardiovascular disease, pulmonary edema, and arterial and arteriolonephrosclerosis and partial atrophy of adrenal glands. Clinical diagnoses of lobar pneumonia, rheumatoid arthritis, arteriosclerotic cardiovascular-renal disease were made.

CASE NO. 3 (R 39 561) was a 40-year-old white male, who was readmitted to our hospital on October 4, 1955. Onset of rheumatoid arthritis of multiple joints was in 1943. Chronic pyelonephritis was found in 1953. He had been bedridden since 1948. Patient had been taking Cortisone since early 1950, being maintained on 50 mg. daily as prescribed by his physician. He had received Corticotropin also at intervals, but the last few injections of this during the summer of 1955 failed to give the patient the "lift" he had experienced in the past from Corticotropin. Butazolidin therapy also had been tried. Patient developed an acute laryngitis on August 27, 1955, which responded to Erythromycin therapy. On October 2, 1955, he again developed a sore throat and hoarseness, for which he received Erythromycin therapy. He was

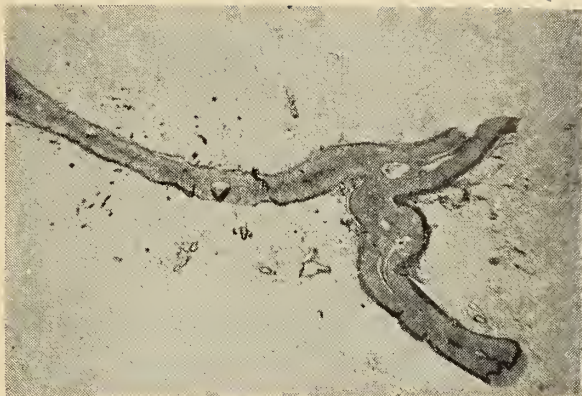


Figure 1 — (Gross Appearance 4.ox) Case 1.

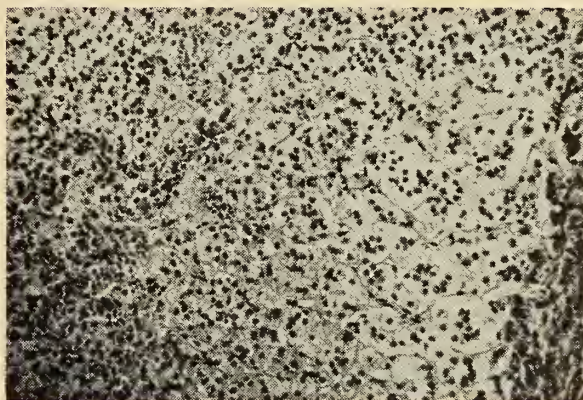


Figure 2 — Case 1 X200.

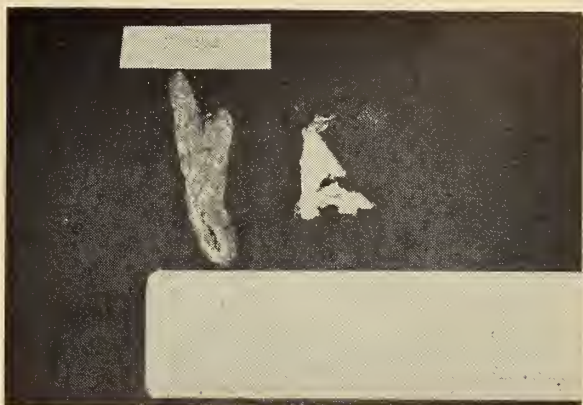


Figure 3 — Case 2.

admitted to the hospital on October 4, 1955, in coma and with a temperature of 104° F. Treatment with multiple antibiotics and oxygen failed, and patient expired on the morning of October 5, 1955.

PERTINENT AUTOPSY FINDINGS

General examination — “Moon” facies and peripheral edema.

1. Adrenal Glands: Grossly were approximately 1/5 normal size with a less than 1 mm. thick, pale yellow cortex (Figure No. 5). Microscopically cortices showed marked atrophy (Figure No. 6). Fat stains showed moderately good lipid content.

2. Pituitary Gland: Grossly unremarkable, but microscopically showed increased basophils with reticulization, degranulization, and hyalinization alterations of these cells.

3. Musculoskeletal: Osteoporosis of all bones, rheumatoid arthritis, grossly and microscopically.

4. Heart: Grossly and microscopically, changes, of slight myocardial hypertrophy, sclerosis and chronic carditis of aortic and mitral valves, and focal fibrosis of myocardium.

5. Respiratory Tract: Gross changes of hyperemia and exudation of trachea and bronchi, and patchy dry granular peribronchial consolidations in the lungs. Microscopically, the changes were of acute catarrhal inflammation in the trachea and bronchi and acute bronchopneumonia.

6. Kidneys: Grossly kidneys were small and scarred. Microscopically there was a marked chronic pyelonephritis.

7. Vascular: Microscopically there were changes of arteriosclerosis, fibrinoid changes with slight chronic inflammatory infiltrate in wall and perivascular tissues of small arteries and arterioles.

Major pathologic diagnoses were:

1. Rheumatoid disease with severe generalized arthritis, aortic and mitral carditis, and myocardial fibrosis.
2. Acute tracheobronchitis.
3. Focal acute bronchopneumonia.
4. Chronic pyelonephritis.
5. Adrenal atrophy.

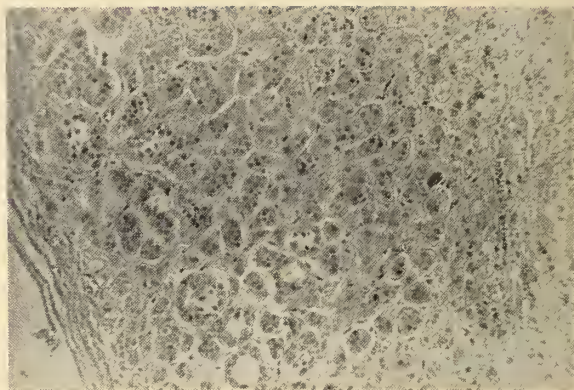


Figure 4 — Case 2 X200.

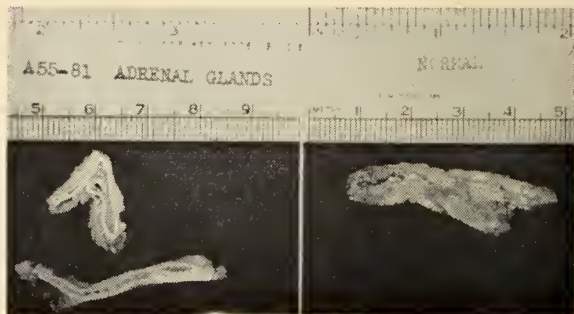


Figure 5 — Case 3.

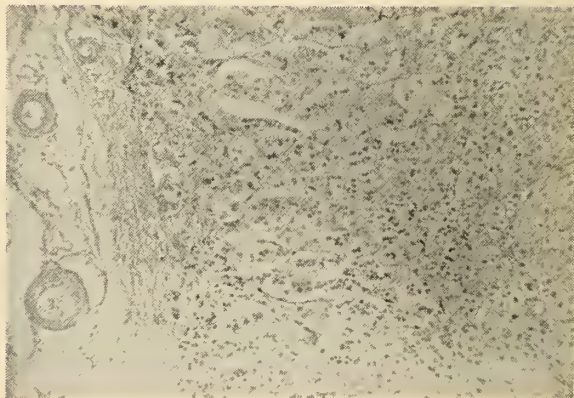


Figure 6 — Case 3 X200.

6. Anatomic changes consistent with adrenal corticoid therapy.

The clinical diagnosis of the cause of death was adrenocortical failure due to prolonged Cortisone therapy for rheumatoid arthritis. Contributory causes were acute tracheobronchitis, focal bronchopneumonia, chronic pyelonephritis, arteriosclerosis generalized, and arteriolonephrosclerosis.

DISCUSSION

The first case shows that major surgery performed on a patient receiving Cortisone cannot be done safely without first priming the patient with Cortisone lest irreversible shock due to adrenocortical failure may result. This point, we believe, has been adequately pointed out since the early days of Cortisone therapy, and surgeons now take the necessary precautions. However, we feel it is urgent to point out that low adrenocortical function may be present many months following cessation of corticosteroid therapy. Patients giving a history of use of these drugs should have a Thorn test done preoperatively or, if in case of emergency surgery where time for the test is lacking, then priming with corticosteroid therapy should be done.

The second case presented the problem of the patient who had been on lengthy Cortisone therapy and developed an apparently mild infection. Coma and hyperthermia were terminal events. The physician is perplexed at the cause of death. Autopsy revealed that the adrenal cortices were atrophied. This fact was not appreciated at the time in 1953.

The third case is one in which, because of the patient's reluctance to discontinue Cortisone, he is allowed to remain on the medication. In spite of moon-facing, increasing osteoporosis,

and lack of response to Corticotropin, the Cortisone was still continued. A relatively mild infection again produced the picture of coma, hyperthermia, and death in 1955.

By reviewing the two latter cases, the similarity of type of death was revealed.

It is felt that probably intravenous Hydrocortisone therapy in similar cases in the future might be of value in preventing the imminent death from occurring. Following recovery of the patient, then steps to stimulate the adrenal cortex may be tried. This, of course, precludes the use of any further Cortisone-type therapy.

The problem presented is more than of academic interest to us in Arizona. Because of our climate, the patients who suffer from diseases for which the corticosteroids are used in treatment are in large numbers among our permanent and tourist population. A great many of them have had or are at present on this type of therapy. We believe the problem of adrenocortical failure is a more frequent one than is being reported or recognized.

SUMMARY

1. Three cases of adrenocortical failure followed prolonged use of steroid therapy have been described.
2. In cases having had prolonged steroid therapy and developing hyperthermia, shock, and coma, adrenocortical failure should strongly be suspected and energetically treated.
3. It is felt that the problem is a more prevalent one than is being recognized.

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EDITOR'S NOTE

(See Page 201)

The facilities of the Commission on Professional and Hospital Activities, Inc. may be offered to additional hospitals. Hospitals may enter this service, acquiring it at any time. The only requirement is that they be listed by the American Hospital Association and present resolutions from their boards of trustees and medical staffs supporting participation in this program. Applications

should be sent directly to Dr. Vergil N. Slee, Director, Commission on Professional and Hospital Activities, Inc., First National Building, Ann Arbor, Michigan. A charge of twenty-five cents for each patient discharged is made to the participating hospital. This fee partially offsets the cost, the remainder being borne by a grant from the W. K. Kellogg Foundation. Most hospitals find that the handwork eliminated in the record room in preparation of monthly statistical reports and medical record room indexing more than offsets the twenty-five cent charge.

Chromatography in Clinical Medicine

By Harold D. Palmer, M.D.

Springfield, Illinois

CHROMATOGRAPHY is a name given to a wide field of procedures which have two things in common, namely (1) inducing the migration of substances in liquids under specified conditions and (2) rendering of the migration visible by coloring or staining the substances which have migrated. When the migration occurs in an electric field it is called electrophoresis. Other methods depend upon the use of two solvents or of one solvent and one solid without electricity. All of these methods are included under the general name of chromatography. But the methods which use paper but do not use electricity have come to be known under the term "Paper chromatography" while "Paper or zone electrophoresis" is used to designate the chromatographic method in which the migration of the charged molecules takes place on filter paper in an electric field. Electrophoresis is used largely for protein analyses, paper chromatography largely for non-protein constituents.

Paper chromatography is now used in wide areas of application. In research it has become very useful and oft times a labor saving method. With it, the constituents of diseased tissues both in the living individual and in excised tissues can be studied more or less directly. (1) And, the constituents of chemical mixtures may be segregated into large classes, such as amino acids, nucleic acid derivatives and hormones. This is a tremendous short-cut over older methods. The method has been extended to include differentiation of metabolic patterns in body fluids and tissues. By using the method in conjunction with radio-active tagging the metabolic point of action of certain agents such as some of the anti-metabolite drugs has been made apparent. The globulin to which iodine becomes bound and the method of transport of other metals has been identified.

Chromatographic methods are not new, in fact, separation of toxin and antitoxin was carried out in a U-tube filled with agar gel 50 years ago but its use was not revived or developed until 1949 when interest in this whole group of physical-chemical methods was re-established.

In the practical field, paper chromatography of the non-electrophoresis type is now used in crime laboratories for the prompt and conclusive identification of drugs and chemicals, — an example is a recent paper titled "Descending Chromatographic Behavior and Differentiation of some Antihistaminics and Alkaloids." (2) These authors were able to demonstrate that morphine and other narcotics as well as the antihistaminic agents with which they are frequently combined when used by addicts can be accurately and quickly identified by a chromatographic method which they describe. Again, this method is a great time and labor saver.

In the clinical laboratory the procedure has been most commonly used in the separation and identification of urinary sugars. It is well known that there is no chemical method which separates certain sugars — because of interfering substances in urine — with complete assurance of definitive results. The chemical methods are also cumbersome and difficult. Paper chromatography, on the other hand, in the words of Doctor Fales, is an "exquisite" method for identification of sugars and yields "unequivocal results." (3)

In the clinical laboratory paper or zone electrophoresis has largely supplanted the use of the Tiselius apparatus. There are several compelling reasons for this among which are the simplicity of apparatus and the yield of a permanent record available for subsequent study. Starch and agar plates are also used as solid media in electrophoresis and these materials have some advantages for special procedures, but are not clinical laboratory methods of wide application.

PRACTICAL USES OF PAPER ELECTROPHORESIS

Probably its most common use is its application in the partition of the serum proteins. The separation of the serum proteins into albumin, α_1 , α_2 , beta and gamma globulins is accomplished by the procedure and the result is a paper strip on which the fractions are separated and can be stained. The relative

amounts of the various proteins can be accurately calculated, after staining, by the use of a densitometer and integrator or by cutting the strips into segments containing the individual fractions, elutriating the dye and determining the concentration colorimetrically. Then, after performing a total protein on the serum by the biuret method one can calculate from the results obtained from analysis of the strip the percentage quantities of the various fractions contained in the total. Electrophoresis is a more accurate method of quantitation and determination of the A/G ratio than the usual salting methods used in the clinical chemical laboratory.

In the partition of serum proteins paper electrophoresis detects dysproteinemia (abnormal amounts of proteins normally present) and paraproteinemia (presence of an abnormal protein). Since its use has become more common, cases of paraproteinemia are being reported in increasing numbers.

The methods may be helpful in demonstrating hypogammaglobulinemia, in the study of certain renal diseases, certain hematologic disorders, xanthomatosis and in idiopathic dysproteinemia.

Agammaglobulinemia occurs in three groups of cases.(4) Group I is physiological hypogammaglobulinemia. It occurs at ages 4 to 12 weeks in all babies and is based on the fact that gamma globulin has a half life of about 20 days. By age 4 weeks catabolism has carried the concentration of gamma globulin given to the baby by the mother to a level below adult normals before synthesis of gamma globulin by the baby has caught up. At 12 weeks of age, synthesis is usually in advance of catabolism so that the level of gamma globulin begins to build up. Group II is made up of cases of congenital and adult agammaglobulinemia and in this group the low level is on the basis of failure of synthesis of gamma globulin which in turn is apparently on the basis of absence of the specific cellular elements responsible for the synthesis of gamma globulin, namely the plasma cells. The congenital form seems to be on a sex linked hereditary basis — boys are affected. The typical history begins at or after six months of age with pyoderma and respiratory tract infections and progresses with repeated infections throughout childhood; the of-

fending organism is often the pneumococcus. One reported case suffered from infection caused by 10 different types of pneumococcus at different times. 0.1 gm. of gamma globulin/kg of body weight given monthly will usually keep the gamma globulin above 150 mg.% and prevent infections. The adult cases occur in both males and females and whether or not they are congenital or acquired is yet to be determined. The third group consists of those cases which develop hypogammaglobulinemia on the basis of failure of synthesis caused by organic diseases. These usually do not reach the low levels of the agammaglobulinemia cases.

Nephrosis gives a very characteristic electrophoretic pattern of plasma proteins, the alpha and beta globulins are high, the albumin and gamma globulins low. The urine of nephrotics yields an electrophoretic curve which is almost like that of normal serum. After steroid therapy, the changes tend to reverse. It is interesting that both nephrotics and children with agammaglobulinemia are susceptible to pneumococcus infections — both have low gamma globulin. Idiopathic dysproteinemia has been observed by several workers in which there is temporary or transient hypoproteinemia without proteinuria.(5) Electrophoresis shows decreased albumin and gamma globulin with some elevation of the alpha globulins. These changes have spontaneously reverted to normal after 10 to 12 weeks.

In disseminated lupus erythematosus the specific protein (LE) has been located in the gamma globulins. Electrophoresis often yields a high gamma globulin level in this disease but this is no more than of supportive importance in diagnosis.

In the diagnosis of multiple myeloma the method has a definite place; in a high percentage of cases it yields a high peak which is located with the beta or gamma globulins. The paraproteinemia of this disease is often first suggested in the laboratory by the tendency of the blood to form rouleaux. Because of this fact, it is well to suspect that something is wrong with the plasma proteins whenever the rouleaux phenomenon is seen, and to carry out paper electrophoresis on the serum. This procedure gives definitive results.

Cases of acquired hemolytic anemia often give gamma globulin levels on the high side.

This type of change is non-specific and is of supportive significance only.

In the congenital forms of hemolytic anemia, however, the method has one of its greatest areas of usefulness. Here, hemoglobin, not serum electrophoresis is carried out. The following hemoglobins may be identified and, in conjunction with chemical tests, the relative proportions in any individual blood specimen determined: Adult (A), fetal (F), C, D, E, and S. This group of anemias, formerly thought of as diseases of the red corpuscle stroma, are now known, as a result of both chemical and electrophoretic methods of research, to be due to the presence of one or more of these abnormal hemoglobins in the red blood cell. The electrophoretic method has made the detection of abnormal hemoglobins relatively simple.

The method, with refinement, may become useful in certain types of hemorrhagic disorders. The hemophilic factor, PTC, PTA, the labile and stable factors, prothrombin and fibrinogen are all serum proteins. The method, now, is used largely in the research field so far as the hemorrhagic diseases are concerned. But, there is at least one hemorrhagic disorder in which the method is currently helpful. This disease is characterized by hemorrhagic diathesis, increased capillary fragility and specific paraproteinemia (hypergammaglobulinemia).(6) It should be kept in mind when observing patients with obscure vascular purpuras. The patients have a presenting complaint of purpura and electrophoresis reveals a hypergammaglobulinemia.

The lipoproteins are contained largely in the alpha and beta globulins; about 75% of the total lipid and 60% of the phospholipid is contained in the beta fraction. The beta fraction is elevated in the nephrotic syndrome, idiopathic lipemia, uncontrolled diabetes and in obstructive jaundice. The alpha globulins often vary inversely with albumin so that in acute febrile disease, cirrhosis, malnutrition and the nephrotic syndrome, while the albumin is low the alpha globulins are usually elevated. A technic employing paper electrophoresis to give an estimate of the total and phospholipid distribution has been described. In addition to the usual dyes for the protein fractions, sudan black B dye is employed in this method to stain the lipoproteins.(7)

Primary familial xanthomatosis has regularly given a marked increase in the beta globulin fraction as measured by paper electrophoresis.

Now something about reliability and reproducibility of results of paper electrophoresis. Its development and use is moving so fast that statements concerning its evaluation made in 1953 and 1954 are no longer valid. There is no reason to compare it with chemical fractionation. Each has its place. Chemical fractionation is complicated and difficult and can hardly be expected to become a procedure of routine availability. The term, chemical fractionation, sounds like something final and conclusive, but there are shortcomings even to these methods. Doctor Ben Fisher(8) of the Department of Hematologic Research of the Michael Reese Hospital writes in a comprehensive review of the subject, "— electrophoretic fractionation of proteins is accepted by many as the most exact method, and each newly devised chemical fractionation technic is compared with the electrophoretic value to establish the accuracy of the procedure,—." Hayles, Stickler and McKenzie(9) of the Mayo Clinic and Foundation write: "The authors use paper electrophoresis to analyze serum proteins. This is simple and requires small amounts of blood and equipment. It will demonstrate small amounts of gamma globulin where the Tiselius method does not." Doctors Walsh, Humoller and Dunn(10) of the Medical Research Laboratory and Radioisotope unit of the Veterans Administration Hospital of Omaha, after a comprehensive study in quantitative filter paper electrophoresis write: "Reproducible results can be obtained by filter paper electrophoresis under controlled conditions."

Fine et al. from Paris, France, state: "In control studies, with precise technic and adequate apparatus, experimental error was less than physiological variations."(11) On the other hand Gitlin of Harvard University, who prefers the use of chemical fractionation and immunochemical methods states, that, in his opinion, electrophoresis is not a suitable tool for the diagnosis of hypogammaglobulinemia.(12)

As with any new method, the full uses and limitations of paper electrophoresis will ultimately be defined by analysis of accumulated experience.

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1 IN 4 NOW 1 IN 3

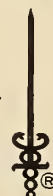
Ten years ago, only one in four cancer patients was being saved. Steadily since then, heart-warming progress has been made. Today, with 450,000 new cancer cases estimated for 1957, you, their physician, can expect to save one in three of these patients.

Many factors contribute to this success — your leadership, a more aware public, improved methods and techniques of detection, diagnosis and treatment. There is every reason to expect this progress to continue to the point where half of those stricken by cancer will be saved. As yet, science does not have the know-how to save the other half.

That knowledge will be gained — and, indeed, the riddle of cancer itself, will one day be solved in the research laboratories. To continue to support this vital work, as well as to carry on its dynamic education and service programs, the American Cancer Society is seeking \$30,000,000. We are again appealing to the public to “fight cancer with a checkup and a check.”

The check is insurance for tomorrow. The insurance for today is largely in your hands, doctor. Fighting cancer with a checkup is our *immediate* hope for saving lives.

AMERICAN CANCER SOCIETY



Leiomyoma of the Stomach

By E. T. McCartney, M.C., M.B., F.R.C.S. and I. Stewart, M.D.
From the Victoria Hospital, Keighley

THIS CASE is of interest because of the confusing symptoms which resulted from the growth of two tumours, one a leiomyoma of the stomach, the other an adenocarcinoma of the colon.

CASE HISTORY

A man of 70 years was admitted to the medical ward. He stated that five years previously he had copious haematemesis and was in bed three weeks. Since that time he frequently suffered from a burning epigastric pain which came on half an hour after meals and disappeared spontaneously, its disappearance being hastened by eructation. His appetite was good.

Five days before admission he had an excruciating low back pain accompanied by faintness and weakness. The pain continued in a mild form for three days, then recurred with sufficient violence to cause him to collapse. He passed a black stool during this period.

Physical examination showed some distension of the abdomen and enough muscle rigidity to prevent palpation. The prostate was moderately enlarged.

He remained in hospital a month, passed several black stools and complained on several occasions of pain below and to the left of the umbilicus. After discharge he had a Barium meal. The x-ray showed a six hour residue and distortion of the duodenal cap. He was referred to one of us (E.T. McC) for further investigation. His principal complaints at this time were constipation, a low left abdominal pain and borborygmi. A barium enema showed the presence of obstruction in the descending colon.

At operation an infiltrating and firmly adherent growth of the descending colon was found and a hemicolectomy carried out. In addition there was a globular tumour suspended from the greater curvature of the stomach about 8 cm. from the pylorus. The distal two thirds of the stomach was removed and anastomosis of the proximal portion made with the jejunum.

He made a fitful recovery after this very considerable procedure, first developing a cough with fever and later a partial collapse of the lung. Three months after discharge he was readmitted with constipation, abdominal pain and vomiting. An emergency operation showed that a loop of small gut had become involved with the large bowel anastomosis and formed a volvulus. This was released but he died the same evening.

PATHOLOGY

The tumour of the stomach, roughly globular and measuring 8 cm. in its largest diameter and 6.5 cm. in its shortest, was clothed internally by intact mucosa and externally by intact serosa. The cut surface was white and glistening with the "watered silk" pattern of the common uterine fibroid. There were several streaky zones of haemorrhage.

Histological sections showed the tumour to consist of large spindle cells with no features to suggest malignancy. There was much oedema and haemorrhage. Professor R. A. Willis kindly examined the sections and expressed the opinion that the growth was a Leiomyoma.

Sections of the growth in the colon showed a papillary adenocarcinoma with no unusual features.

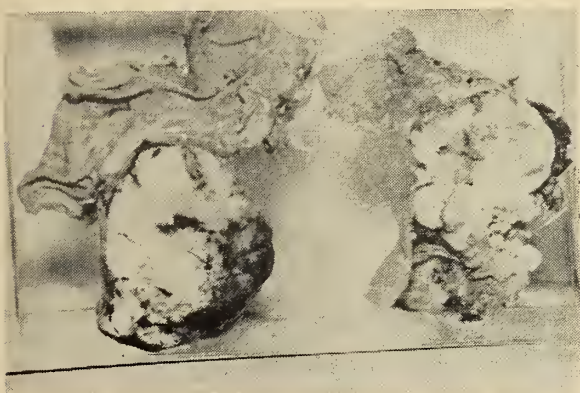
DISCUSSION

Once the presence of two tumours was known the clinical features could be clearly separated. The leiomyoma had almost certainly been responsible for the post prandial pain and the haematemesis, the adenocarcinoma for the low backache, left-sided abdominal pain and melena. It is of course possible that the leiomyoma contributed to the malena.

The size of the leiomyoma is unusual. Golden and Stout (1941) analysing the records of the Presbyterian Hospital, New York found that in a series of 5,869 autopsies, 20 of these tumours (0.34%) were discovered. All but three were less than 1 cm. in diameter and the largest was 3.25 cm. in diameter. In the same period of 26

years there were seven incidental findings at operation and of these the largest was 2 cm. in diameter.

These authors report three cases only of operation carried out for gastric leiomyoma. These were of equivalent size to the one now described. Case 6 was bilobed, the endogastric part being 4.5 x 3.5 x 2.5 cm., the exogastric 2.8 x 2 x 1.8 cm. Case 7, also bilobed, had an endogastric portion 6 cm. in diameter and an exogastric portion 11.5 x 7 cm. Case 8 was an endogastric mass 2.3 x 2 cm. Willis (1953) encountered one weighing 900 grams and Rajasingham and Cooray (1950) described one of 4080 grams. Both these were exogastric.



On the left the leiomyoma is seen depending from part of the excised portion of the stomach. On the right the obstructing adenocarcinoma of the colon.

The symptoms which result from these tumours depend mainly on the site. Protrusion within the stomach may lead to ulceration and haemorrhage as in Golden and Stout's cases 6 and 7. The haemorrhage may be rapidly fatal as in their case 8. Cramp-like epigastric pain was noted in cases 6 and 8 and it will be remembered that our patient had a burning epigastric pain after meals. The larger exogastric tumours, according to Willis, are likely to be symptomless and attention only drawn to the condition by the palpable mass. Mechanical obstruction has been noted by Willenbacher (1928) and a gastroduodenal intussusception was described by Barnett (1925).

SUMMARY

A case is described in which a leiomyoma of the stomach and adenocarcinoma of the colon were found in the same patient and gave rise to a confusing symptomatology.

We are indebted to Professor R. A. Willis for his examination of the histological material.

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CANCER STRIKES

1 in 5

STRIKE
BACK

GIVE

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THE *President's* PAGE

THIS IS my final page as a message from your president. Hence, I shall indulge in the luxury of some vindictiveness in my observations of present legislative and socio-economic trends, and in presumption of offering some advice.

When are we going to learn to say "no"?

We permitted the Socialist planners to talk us into participating in the "Blue Skies," an unlamented scheme of the American Workers' Health and Medical Association during the depression years and the great exodus from the Dust Bowl. Were our motives for receiving payment from the government for our services to these unfortunates based on pure misty-eyed idealism and humanitarianism? Or were we impelled to submit because we liked the welcome sight of the Federal Treasurer's check in our mail?

Next, came home town care of the veterans. Again, stirring music was played to arouse our patriotic emotions when we were harangued with remainders of our duties to the veterans and the promise of reward in gold. We strained like Ulysses on hearing this song of the Sirens, but we lacked the foresight of tying ourselves to a restraining mast of dignity.

Now, we have Medicare. Again, we have been maneuvered into retreating another step before the onslaught of Socialism. This scheme has been cloaked with respectability, because our own Blue Shield has been designated as the fiscal agent: but the money still comes from the taxpayer's pocket. (What's wrong with me, — that I find taking taxpayers' money so distasteful?) But I am reminded of Goethe's Faust.

"Cursed Mammon be, when he with treasures
To restless actions spurs our fate."

Now, we are faced with the prospect of selling our souls, — again through Blue Shield and Blue Cross, — and again for money, — by permitting the state and federal governments to purchase insurance coverage for certain classes of recipients of public assistance. Sure! I know that these people need and deserve good medical care. But can't we find a more dignified way to provide it without sacrifice of sound economics of Blue Shield which might expose our own plan (Blue Shield) to bankruptcy with possible eventual assumption of control by the federal government? We are "tut-tutted" by all kinds of empty assurances that such catastrophes may not happen; but I can see it only as a plot to destroy the protective (Blue Cross) Shield, and make our armor more vulnerable in our struggle against Socialism.

What will be next? The Siren's song and promise of gold for a Medicare plan for postal and other governmental employees; then possibly unions and farm groups. Then, who is left? Well, fellows, you might as well be paid for taking care of the few tax-paying suckers who are left out! That's what happens when we disregard our principles of democracy, based upon the concept of the freedom, dignity and personal responsibility of the individual citizen.

I recognize that social changes are inevitable. But, please, let us exercise prudent judgment, caution and dignity in our negotiations. Ernest E. Irons, M.D., in his special article on "Citizenship — A Physician's Obligation" (JAMA, July 14, 1951, Vol. 146, No. 11) presented in a scholarly manner, a warning against too readily submitting to social changes, and states, "— new theories of procedure are suggested, some of which are good; others are bad because the means employed for attempted correction may yield temporary benefits, but later create new distress. Alluring bait is offered in large print; heavy penalties are concealed in small type."

There may be some of you who are saving "Ah! Podolsky, face reality! Socialized medicine is inevitable. You may as well learn to like it, — and get paid for it!" But, I don't have to like it. I'd prefer to fight against it. And, besides — I like to squawk like hell.

A. I. Podolsky, M.D.

President

THE ARIZONA MEDICAL ASSOCIATION, INC.

Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
 2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
 3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
 4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
 5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.
 6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.
 7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.
 8. Illustrations — Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.
 9. Reprints — Reprints must be paid for by the author at established standard rates.
- The Editor is always ready, willing, and happy to help in any way possible.

(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

THE NYLON NIGHTIE

THREE years ago in this Journal I wrote "If we do not trouble ourselves to do these things, we will continue to be damned." "These things" referred to our proper indoctrination of the Public with the true facts about the practice of Medicine, its cost, and ourselves. Our periodicals continue to publish articles which belittle the Medical Profession by exposing exceptional deficiencies and alluding to the "exorbitant costs of medical care." These authors seem to remain steadfast in their purpose. I ask you, what is their objective?

When these assaults first began to appear it was my opinion that the author's intentions were, at least in part altruistic, but as time has passed, and the tirades continue, I have been forced to change my opinion. Because of the similarity of the pattern of their destructive attacks I am convinced that these authors are beset with intent to change our social order.

One of the most dastardly articles to appear was that of Sidney Shalett and J. Robert Moskin, in the July 1956 issue of Woman's Home Companion, entitled, "The Doctor's Dilemma — why you can't afford to be sick." (See February 1956 editorial — case of the yellow journalist). These same authors in the next issue of the Woman's Home Companion gave birth to another monstrosity entitled "Can we have Better Medical Care?" Add to your library such articles as "The Doctor's Conspiracy of Silence," "How much Should Your Doctor Charge?", "Are Your Doctor Bills Padded?", "Patients for Sale," "Watch it, Doc," and "Why some Doctors Should be in Jail," along with others including the Ewing report to President Truman. A critical study of these will convince you that they have one consecrated purpose, namely to destroy the greatest system of health preservation ever known.

All of these articles dwell upon and emphasize such subjects as "higher costs of medical care, fee splitting surgeons, excessive charges, failure to provide equal care to all, ethical

failures, failure to police our own profession, failure to accept all group medical care plans, failure to accept Federal compulsory health insurance, our opposition to Federal support of the schools, our failure to provide enough Doctors, our failure to curtail all Ghost surgery, and our failure to accept inevitable social changes."

We as Doctors should be proud that we do not readily accept the radical changes referred to and thus discard a system of Medicine which is far superior to that found in any nation of the world irrespective of their form of Government. We realize that, although there is always room for improvement and that Utopia may be around the corner, we must be cautious unless we are guilty of omission of fostering a system of medicine which has already been proven many times in the past to be a comparative failure in its application.

Communism proposes, that all are equal in all things and that all share and share alike. This same theme is frequently proposed by the authors of the above mentioned articles. If our medical profession has failed to readily yield to such teachings then we should be proud that we "stubbornly" but fortunately not "blindly resist changing concepts of medical care" as Shalett and Moskin have phrased it.

Why do these writers continue to preach that "hostility of the people toward the medical profession continues to grow and grow?" Why are we continually harassed by some of the press as sinners, money grabbers, cold blooded, unsympathetic, negative do-nothings, as against constructive changes, as disliked rather than loved, destructive, rather than constructive, harsh rather than mild, that we are criminals, stupid, greedy, and that we wantonly ravish the public? The answer to the above questions becomes an ignominy when it is known, that repeated polls have shown that each individual's personal physicians are free of these charges and that they do not believe that their medical costs are too high. In other words the public as a whole is not dissatisfied with their own doctors. The polls show further that they do believe that all doctors, other than their own, are guilty as charged. The only answer to this paradox is that from their own knowledge and personal experiences they are satisfied with their physicians who serve them and that their

opinions regarding other doctors is based wholly upon what they read in the press. This paradox then becomes a spring board for the reader of these articles to dive into the pools of Doctor-Hate-Fomenting.

Since dollars can be mathematically tabulated, and because most everyone is dollar conscious, let us consider the indictments as they are related to medical costs. The authors have been convincing in their attempt to create the illusion, that rather suddenly we have been confronted with something new in medical costs. They further imply that medical costs are out of proportion to anything else and are not in keeping with the general rising costs of living. Not a single one of these authors has been honest in their presentations relative to the costs of medical care. This illusion is being created by the following quotations "disastrous surprise medical bills—," "The cost of medical care has crept up to such dizzying heights that most Americans cannot afford to be sick under the established fee-for-service system of paying their doctor by the visit or for work done." Marion B. Folsom, Secretary of Health Education and Welfare "—we must help ease the mounting burden of the costs of medical care." "—costs of drugs . . . nursing and hospital care have risen astronomically too," "Most Americans are unhappy today about the increasingly difficult struggle to pay the cost of good health," "fee-for-fee service system is proving less and less adequate as medical practice becomes more specialized and medical costs leap upward."

Re-read these quotations and you will be cognizant, if not so already, of the "crept up" "heights," "mounting," "risen," "increasingly" and "leap" — as if present costs were new. The answer is that medical care costs less today than it has ever cost and this is in spite of an increase in hospital costs per day.

The only fair "normal" period upon which to base comparative costs is that of the 1935-39 period as compiled by the Bureau of Labor Statistics, rather than the more recent conversion to a period of 1947-49. So let us consider the facts regarding medical costs as related to the cost of living.

Since 1935-39 (equals 100) period, the cost of medical care has only risen approximately 180 whereas the total cost of living has climbed

to 192 — thus medicine is about 8 points less than the over all cost of living. If 1947-49 is considered 100 then medical costs have risen more rapidly than the general cost of living during the last 10 years, being 125 to 115 points. This puts medical cost in an unfair position because during the 1935-39 to 1947-49 period medical cost lagged far behind the general increase in the cost of living. Since 1949 the over all cost of medical care has not caught up with other costs. The over all cost of medical care, including doctors fees, dentist fees, prescriptions, aspirin and milk of magnesia, vitamins, etc., are still relatively below the general cost of living as determined by the Bureau of Labor Statistics. Knowledge of facts make detestable lies of the statements that the cost of medical care is new or increasing out of proportion to other costs.

The writers emphasize that it is continuously more difficult for workers to meet their medical costs. Is this true? — the answer is NO. It now only takes 54% of one's wages to purchase the same amount of medical care which he could purchase in 1930-39. On the same basis the worker only works 60% as much to purchase the same amount of all good and services. Thus the weekly wage will purchase 40% more in spite of the fall in the purchasing price of the dollar. The following is a quotation from a Washington release of January 26, 1957, "A total increase in consumer's price during 1956 was nearly 3%. The average earnings of factory workers set a new high record in December, so that the buying power . . . went up despite the price rise."

The culprits leave a lasting impression that Doctors are ones profiting by these so called increases in medical care (a lie) but they through ignorance or malice intent fail to mention that the Doctors' share of the medical cost dollar has dropped from 33 to 28 cents, and that their fees have gone up less than other costs. A chapter could be written on why hospital and drug costs have had to increase; in order to decrease hospital stay from three weeks to five days and to save more lives. The National expenditure for medical and hospital care has remained between 4 and 5% of the national income for 30 years. Actually much of the medical costs now is due to a large increase in the birth rate, which as

Frank G. Dickinson states, "is certainly not a disease."

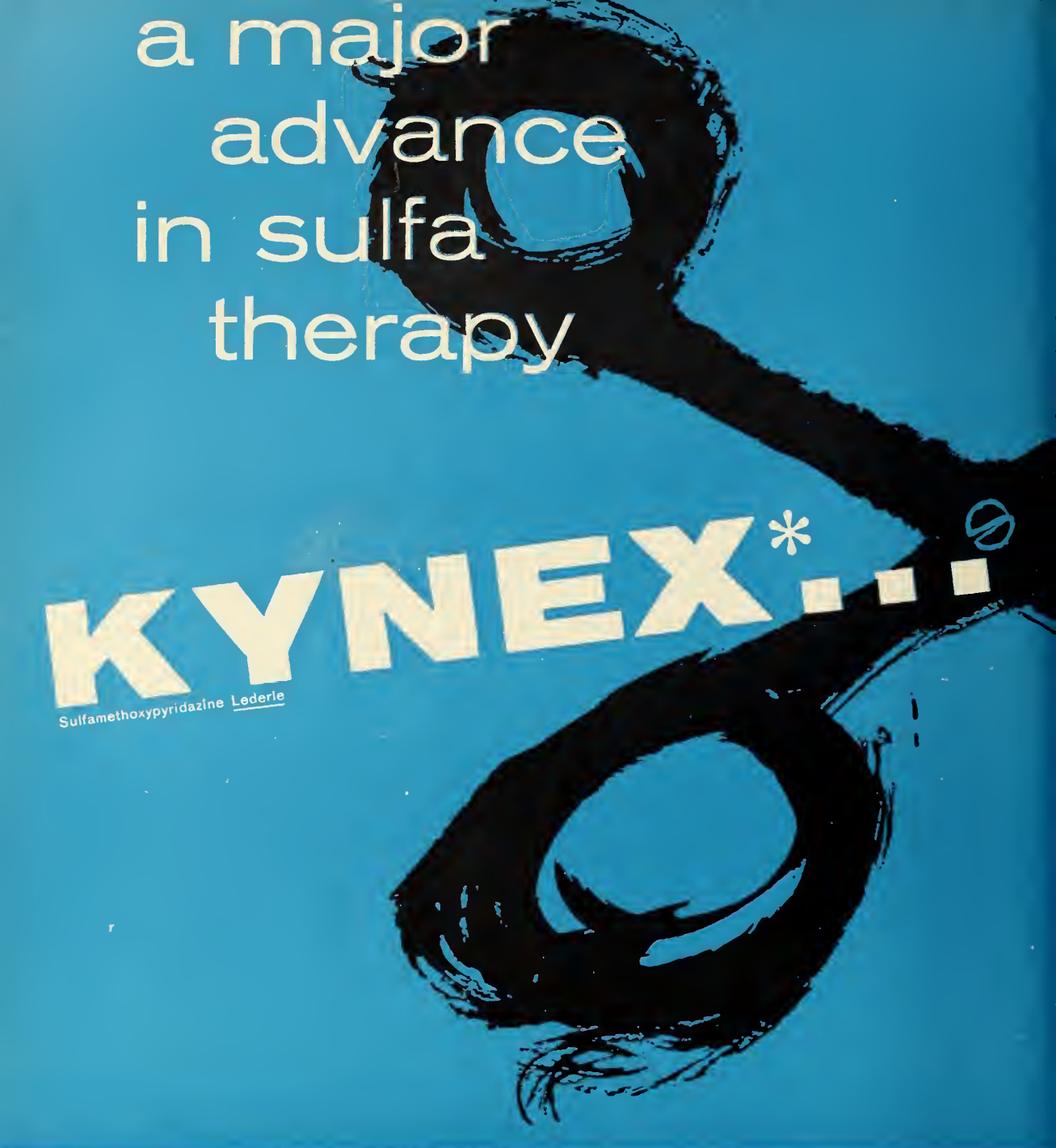
Why do they state that people can no longer afford medical care when actually they are making more purchasing wages than ever before? Consider that since 1935-39 (average) to 1953 the expenditure for tobacco has increased from \$1,621 millions to \$5,310 millions (313 times), jewelry from \$402 to \$1,560 millions (5 times), personal care \$916 to \$2,641 millions (2.7 times) and user operated transportation (cars, etc.) \$4,808 to \$23,461 (4.8 times), whereas all medical costs have increased from \$3,928 to \$16,194 million (4 times). From these scattered representative examples it is readily determined that if people cannot now afford medical care that by the same token they also cannot afford the other necessities of life. Have there been any proposals to assure all peoples equally with the best food and housing available? The answer is NO, yet these two items are more essential to good health than is medical care.

If these recent authors on medical problems are as wrong in their versions of malpractice, fee splitting, ghost surgery, medical ethics, and doctor's morals as they are about medical economics, then it might be said their writings all can be discarded. But such is not true because millions of people have already been influenced by their repeated innuendoes.

Our present day hate forming apostles of agitation are by their avoidance of the whole truth using the Hitler form for spreading propaganda, as described by him when he stated, "The function of propaganda is, for example, not to weigh and ponder the rights of different people, but exclusively to emphasize the one right which it has set out to argue for, its task is not to make an objective study of the truth insofar as it favors an enemy."

Let us remember that there is no person, society, group or order organized or not organized that cannot be destroyed by the repeated impregnating of the minds of the public with selective, negative, exposures. That these authors under discussion are fostering a revolution is clear from their statement "and even more radical changes seem inevitable. . . . This drastic possibility is a National Health Insurance program, made compulsory by Federal law."

The shroud which conceals the design of



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advance
in sulfa
therapy

KYNEX* 
Sulfamethoxypyridazine Lederle

KYNEX is an entirely new, readily soluble, single sulfonamide exhibiting excellent antibacterial action at radically reduced dosage.

KYNEX offers desirable clinical advantages hitherto not obtained by any related drug —

LOW DOSAGE: a total maintenance dose of only 2 tablets daily.

HIGH SOLUBILITY: prompt absorption, adequate diffusion into body fluid and tissue.

PROLONGED ACTION: therapeutic blood levels within the hour, blood concentration peaks within 2 hours—5-10 mg. per cent blood levels persist 24 hours after single oral dose of 1 Gm.



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BROAD-RANGE EFFECTIVENESS: KYNEX is particularly efficient in urinary tract infections due to sulfonamide-sensitive organisms, including *E. coli*, *Aerobacter aerogenes*, *paracolon bacilli*, *streptococci*, *staphylococci*, Gram-negative rods, diphtheroids and Gram-positive cocci.

SAFETY: KYNEX offers a margin of clinical safety based on low required dosage, solubility, slow excretion rate. Although KYNEX Sulfamethoxypyridazine is a sulfonamide derivative and the usual precautions regarding such drugs should be observed, the low daily dose of 1.0 Gm. is all that is required for the therapeutic blood levels. No increase in dosage is recommended.

CONVENIENCE: The low dose of 1 Gm. (2 tablets) per day offers optimal convenience and acceptance to patients.

EACH TABLET CONTAINS: sulfamethoxypyridazine . . 0.5 Gm. (7½ grains). **AVAILABLE:** Bottles of 24 and 100 Tablets.

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*Reg. U.S. Pat. Off.



such writers as Shalett and Moskin, by analysis becomes as transparent as a Bride's Nylon Nightie and through it one sees not the chaste Venus depicted by them, but her sanguineous torso carnaged by the duplicity of beguiling social molesters — State Medicine.

COMPLAINTS TO THE EDITOR

PERIODICALLY verbal complaints are registered with the Editor as to the opinions expressed in this Journal, either as to editorial comment or frequently as to the articles published. The prime criticism registered is not that the articles or comments should not be published but rather that the opinion expressed by the writer is vigorously denied by the complainant. This is thoroughly understandable although at times the Editor does not appreciate the incensed tones being directed at him. As in the past, I would like to encourage those who differ with the opinions published in this Journal to write Letters to the Editor denouncing or denying the material as published. It obviously will obtain a much larger audience, will do much more to present the other side of the argument than directing the comments solely at the Editor. The policy to present all sides of a debatable issue, if presented to the Editor, has been stated and letters will be published if submitted.

ARIZONA MEDICAL JOURNAL WINS AWARD

THE JUDGES Committee, composed of members and officers of the Western Society of Business Publications, Los Angeles, gave the second place award for general excellence to the ARIZONA MEDICAL JOURNAL. This class included eleven publications in the 1956 Contest sponsored by the Arizona Newspaper Association.

LETTERS TO THE EDITOR

February 12, 1957

Dear Editor —

ONE WONDERS about the tranquilizing drugs, of course, and the unusual whole-hearted acceptance of them for widespread use.

Are they to be like tobacco?

Equanimity itself is very questionably war-

ranted or desirable in human circumstances. One who finds it by artificial means, whatever their pharmacologic innocuousness, predictably loses tolerance for tension and neglects to some extent his own resources for solving or releasing tension.

The philosopher does not want docility or resignation or escape in man, nor dulling of man's spirit.

Secondly, the possible side-effects of any new drug are studied carefully. But, in the case of the tranquilizing agents, I doubt that the neurologic complications (clinical and sub-clinical Parkinsonism) are really side-effects; rather, they may prove to be direct effects of the drugs, present to some extent in every individual who takes them. Is there any more relentlessly tragic condition than Parkinsonism? It disturbs the neuropsychiatrist to notice a relatively infrequent blinking in referred patients who have been taking these drugs.

Next comes the slight monotonizing of the voice; then the little diminution of associated movements.

The catholicon or panacea perhaps had better be sought in religion and in philosophy and the social sciences than in the test tubes of our commercial alchemists.

Very truly yours,
William B. McGrath, M.D.

Editor, Arizona Medicine:

THE UNDERSIGNED, who are the members of the Industrial Relations Committee of the Arizona Medical Association, Inc., wish to protest the editorial, entitled "An Internist Looks At The State Industrial Commission" and signed by E.E.Y., which appeared in the January, 1957 number of Arizona Medicine. We trust that the journal will assign this point by point reply a position of equal prominence.

The article in question contains serious misconceptions that should be publicly corrected. First of all, the acceptance of certain medical condition as Industrial Commission liabilities is not a judgment made by personnel of the Industrial Commission. Rather such determinations are arrived at through opinions of the Courts in disputed cases, often issuing from the Arizona Supreme Court. Plainly, neither the Industrial Commission nor the physicians

of the State can challenge these legal decisions.

It is recognized that fees for the care of Industrial Commission clients often do not approach those charged for similar services rendered private patients. However, the Fee Schedule was established by the panel of a previous Industrial Relations Committee, after thorough consultation with physicians throughout the State. The fees presently paid, therefore, were set by physicians and were not dictated by the Industrial Commission. Furthermore, the Industrial Relations Committee, since September of 1956, under directive of the Council of the Arizona Medical Association, Inc., has been negotiating with the Commissioners for a new Fee Schedule and more realistic charges for procedures and services in all the specialties, including internal medicine. In attempting to arrive at fair figures, the Industrial Relations Committee has communicated with all the specialty societies in the State and the Arizona Academy of General Practice to request specific recommendations. It is hoped that we will be able to adopt the Relative Value Schedule of the California Medical Association to our uses and apply such conversion factors as are agreed upon by the various specialties. In this way fees in the future could easily be again liberalized, when warranted, by a simple revision of the conversion factor. We have already had replies from a majority of the specialty groups, including the Arizona Society of Internists, approving this plan and advising us of acceptable conversion percentages, most of them identical.

The statement that the "very low fee rate" cannot be justified because the Industrial Commission is an insurance carrier and can therefore at will adjust its Fee Schedule is an obvious oversimplification. The Commissioners of the Industrial Commission of Arizona have a duty not only to the physicians of the State but also to the clients for whose care they are financially responsible and to the business concerns whose employees by law fall under the procedural jurisdiction of the Industrial Commission of Arizona for medical management. Clearly, the Commissioners cannot raise the medical charges without careful calculation lest the change entail an increase in the premium level. Against such an increase the insured companies would have legal and legislative recourse that could delay advancement of fees for years.

We are struck most of all by the simple fact that the entire editorial was unnecessary. The questions raised by the writer could have been answered quickly if he had taken the trouble to contact any member of the Industrial Relations Committee. One wonders if perhaps he does not know that the State Association has since the adoption of its Constitution provided a standing committee for the discussion and adjudication of complaints about all aspects of industrial practice. Other physicians in the State are aware of the existence of the Industrial Relations Committee and seek its good offices often. The Industrial Relations Committee also is surprised that this editorial appeared without comment from the Editor-in-Chief. As a member of the Council of the Arizona Medical Association, Inc., the Editor-in-Chief presumably has known of the study being made by the Industrial Relations Committee on a new Fee Schedule since the formal motion of Council to that effect at its September, 1956 meeting. It would seem that at least a footnote to the article of E.E.Y. might have transmitted this information to its readers.

The undersigned believe strongly that the editorial pages of Arizona Medicine should not be a source of inflammatory and easily correctable misinformation but rather a source of authoritative opinion for the members of our Association. Legitimate controversy is one thing; indignant polemic untempered by elementary knowledge of the subject is quite another. We hope that setting the record straight in this fashion will serve to give a more accurate picture of the current status of the Industrial Commission Medical Fee Schedule.

The Industrial Relations Committee
Arizona Medical Association, Inc.
Lindsay E. Beaton, M.D., Chairman
Francis M. Findlay, M.D.
Robert E. Hastings, M.D.
Joseph Saba, M.D.
Leo L. Tuveson, M.D.

E. E. Y. was well aware of the existence of the Industrial Relations Committee. The Editor-in-Chief also knew of the study being carried out at Council direction over the voiced objections of the Chairman of the Industrial Relations Committee. The complaint of the G. P. and Internist seemed justified.

Editor

The History of Medicine in Arizona

COL. JOSEPH B. GIRARD

The Arizona Daily Star, Wednesday Morning,
September 4, 1918, page 2

COL. JOSEPH B. GIRARD,
U.S.A., RETIRED, DIES
at SAN ANTONIO, TEXAS

Was Son-in-law of Late Col. Wm. Oury
of Tucson; Once at Fort Lowell.

Mrs. B. Cronley, of 1016 South Sixth avenue, has received news of the death, August 25, at his home in San Antonio, Texas, of Col. Joseph B. Girard, U.S.A., retired. Col. Girard, who is well remembered among the old residents of the city, was a pioneer Tucsonan, having been stationed at Fort Lowell, as post surgeon in the early seventies. He married a daughter of Col. William Oury, renowned Indian fighter and early-day capitalist.

Col. Girard, who was a man of great scientific attainments, has a long and distinguished career in the army, being retired a few years since, for age. During his active service he was stationed at most of the large posts in this country as well as in Cuba, Hawaii and the Philippines. He was for many years a partner of the late Andrew Cronley in cattle and ranches on the San Pedro river, and, at the time of his death, a large property owner in Tucson, several blocks of valuable real estate in the south end of the city standing in his name.

Three daughters survive Col. Girard: Mrs. F. Klamp, of Los Angeles; Mrs. John E. Hemphill, wife of Major Hemphill, U. S. Cavalry, who is now serving in France; and Miss Laura Girard, of San Antonio.

Interment will take place in the post cemetery at Jefferson Barracks, St. Louis, where Mrs. Girard, who died several years ago, is buried.

NOTE — CORRECTION FEBRUARY ISSUE. THE HISTORICAL ARTICLE WRITTEN BY DR. HOWELL RANDOLPH WAS INCORRECTLY ATTRIBUTED TO DR. N. R. BLEDSOE. APOLOGIES ARE OFFERED BY THE EDITOR.



Dr. Joseph B. Girard (Col. in U.S.A.)

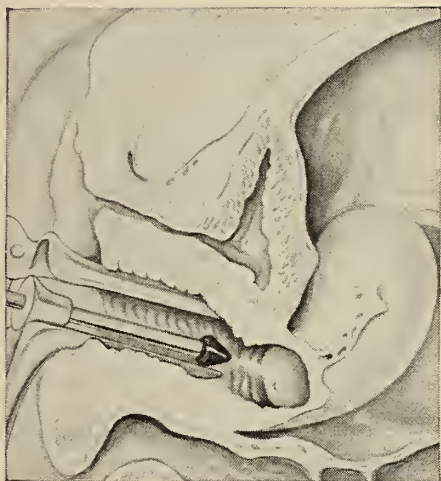
NEWS ITEM

A new medical film — "The Metabolic Insufficiency Syndrome: Diagnosis and Treatment" — is now available from the Medical Film Center of Smith, Kline & French Laboratories. Particularly oriented towards the physician in general practice, it also is suitable for medical teaching.

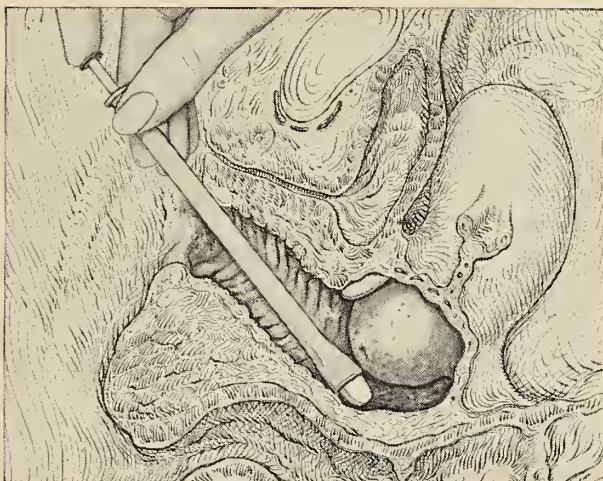
A 16 mm. sound motion picture in full color, the 25-minute film reviews the processes of metabolism and describes the etiology and diagnosis of hypometabolism, whether due to subnormal activity of the thyroid gland itself (hypothyroidism) or faulty cellular utilization of the thyroid hormone (metabolic insufficiency).

Prints of this film, as well as other medical motion pictures, are available on free loan to physicians and medical groups through SKF professional Service Representatives, or by writing: Medical Film Center, Smith, Kline & French Laboratories, Philadelphia 1, Pa. Four weeks' notice and an alternate showing date should be given whenever possible.

COMPREHENSIVE VAGINITIS REGIMEN



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Tablet Insertion

Floraquin® Rebuilds the Defense Mechanism in Vaginitis

Combined office and home treatment with Floraquin provides a comprehensive regimen which encourages restoration of the normal "acid barrier" to pathogenic infection.

Vaginal secretions normally show a high degree of protective acidity (pH 3.8 to 4.4). When this "acid barrier" is disturbed, growth of benign Döderlein bacilli is inhibited and that of pathogens encouraged. Floraquin not only provides an effective protozoacide and fungicide (Diodoquin®) destructive to pathogenic trichomonads and yeast, but also furnishes sugar and boric acid for reestablishment of the normal vaginal acidity and regrowth of the normal protective flora.

Suggested Office Floraquin Insufflation

"... the vagina is treated daily by swabbing with green soap and water, drying and insufflation of Floraquin powder."*

Suggested Home Floraquin Treatment

"The patient is also issued a prescription for Floraquin vaginal suppositories which she is instructed to insert high into the vagina each evening. On the morning following each application of these suppositories, the patient should take a vinegar water douche. . . ."

A Floraquin applicator is supplied with each box of 50 Floraquin tablets. G.D. Searle & Co., Chicago 80, Illinois, Research in the Service of Medicine.

*Williamson, P.: Trichomonad Infestation, M. Times 84:929 (Sept.) 1956.



TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M.D.

'M.D.'

, the brand new medical journal, has just been sent out gratis to 150,000 M.D.'s. We mentioned the mag. last year when it was in mock-up form, and then had to pretend we hadn't said anything about it because the M.D. Company insisted on its semi-secret status. . . . 'M.D.' is the journal which walks like TIME Magazine. It is a good job, and will be sensational, tho it could be better. In this case, 'the shorter the better'. There just isn't enough medical news to fill such a journal to full size, and padding it too much with medical history makes for slow reading. . . . We suspect that people who are smart enough to put out Number I, Volume I will be smart enough to revise it. . . . The advertising is lush and top notch. The illustrations are O.K. The editorial board contains quite a few familiar names, and the chief (F. MARTI-IBANEZ, M.D.) and his assistant (MICHAEL FRY, D.Sc.) will probably become better known as the journal flourishes. The method of subscription hasn't been announced.

Sometime between the day this is written and the day it is published (2 months) chest surgeon Dr. John Steele will give a brief report and analysis in St. Louis of current trends in the SURGERY OF TUBERCULOSIS. Dr. Steele, formerly of Milwaukee and now of San Fernando V. A. Hospital near Los Angeles, has obtained data from the thoracic surgeons of 41 V.A. hospitals. It makes up-to-date reading, and quite exciting if you like that sort of thing. . . . About half of the hospitals use thoracoplasty fairly often prior to resection. About 70% use thoracoplasty when needed concomitant with resection. Twenty-seven hospitals use thoracoplasty after resection, but half of them only for complications. Six of them make routine collapses after pneumonectomy. Only 15 hospitals use other space-filling procedures (plombage, phrenic crush, pneumoperitoneum, etc.) before, during or after resection, with a few hospitals favoring the various methods at various times. . . . Most hospitals add extra drugs to 'cover' surgery in 'resistant' cases, but there is a tendency to use new drugs for other reasons (cavity, positive sputum, etc.) . . . Most hospitals have no prejudice against segmental or smaller resections, but a goodly number prefer lobectomy in 'resistant' cases. . . . There are quite a few reasons given for resecting 'closed' lesions, including youth, 'filled' cavities, and size of lesion. . . . Almost as many places do extraperiosteal plombage as do thoracoplasty when resection is not feasible.

The phthisiotherapists in Denver have several red-hot and RADICAL ATTITUDES about TREATMENT OF TB. They believe, for instance, that most patients should be up and around, and even 'about', while receiving chemotherapy. (We have felt for 4 years that being out of bed and slightly ambulatory is both safe and helpful, but we think that going much farther, with a potentially infectious patient, is dangerous to the patient and contacts). . . . Their most radical idea is that THE DOSE OF INH (Isoniazid) should be 20 mg. per kilogram per day. This pushes the dose of the drug to 1,600 mg. for a person weighing 175 pounds, quite a lot higher than the current 300 mg. level. The Denver guys (Mitchell, Filley, Middlebrook, Dresser, et al.) say that the high intake keeps the blood level high, keeps the effective non-acetylated level high, and works better with PAS when high. The elevated intake also causes an increased tendency to neuritis (10 to 30 per cent?), but it can be completely prevented by 100 mg. per day of pyridoxine (Vit. B6, now available wholesale at 1.8 cents per 25 mg. tablet). It can NOT be easily treated, however, once it has occurred, so beware, beware.

Here's A PEPTIC ULCER TREATMENT which has almost everything, — it is of foreign (glamorous) origin, it requires a prescription, it allows patients to eat what they want, and its advertising is loaded with double-talk. . . . The trade-name is 'Exul', and it contains a substance called 'Nupra'!

We do not usually see the 'SECRETARY'S LETTER' from the A.M.A. It is written by George Lull, M.D., Secretary-General Manager. . . . It is a newsy publication of a few pages. 'Letter No. 386' contained a story of the tribulations of a Hungarian doctor's family; the change in an A.M.A. award; the election of a negro M.D. to presidency of a Tennessee county medical society; and news items from Chicago and the A.M.A., including a note that the Council on Pharmacy and Chemistry has now simply become the 'Council on Drugs'.

TUCSON HOSPITAL NEWS is dynamic and promising. A Joint Hospital Drive for funds is scheduled to begin, and to continue for three years. They hope to raise \$1.5 million which will be matched by Hill-Burton funds. . . . Half of this money will go to the Tucson Medical Center for 100 beds, to be added to the 222 current capacity. There is a critical need for beds, with a five-fold increase in admissions in 10 years and



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MEDICAL DIRECTOR
DUKE R. GASKINS, M. D.

Dear Doctor:

I am looking forward to the State Medical Convention to be held at the Stardust Hotel in Yuma, April 10-13.

To be on hand for the meetings, I have taken a room at the Stardust Hotel. . If you have an opportunity, drop by for a chat.

If you have any suggestions or questions about HBA and their services, I will be very pleased to talk with you at that time.

Very truly yours,

HOSPITAL BENEFIT ASSURANCE

Duke R. Gaskins, M.D.
Medical Director

DRG:sk

a census of 94% in recent months. . . . The other half of the funds will go to St. Mary's Hospital which will build a branch hospital of 150 beds on the east side of the city. (TMC is on the east side, and St. Mary's is now on the west).

It is now time for everyone to take whacks at those 'harmless' TRANQUILIZERS. Many doctors believe that people take too many without medical control; many psychiatrists believe that calming some neurotic people may have unfortunate end-results; and now a California pharmacist lets fly. . . . Dr. J. F. Bestor of U.S.C., speaking to the American College of Pharmacists, warns against the possible evils of combining the 'calmatives' with other CNS depressant drugs, either by intent or accident. Chlorpromazine plus morphine, chlorpromazine plus meperidine, reserpine plus general anaesthetics, any tranquilizer plus barbiturates or with alcohol, may all produce excessive or side effects. It is believed that chlorpromazine causes constriction of the sphincter of Oddi, but the jaundice and possible liver damage are eliminated by discontinuing the drug. Reserpine may cause bleeding of peptic ulcers, loss of libido, and even suicidal tendencies. Meprobramate may cause "allergic-type reactions", but its chief hazard is habituation, so continuous therapy is discouraged.

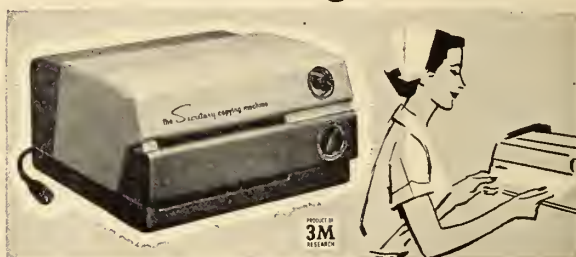
Dr. Bernard Halpern of Paris, one of the discoverers of the antihistamines, has recently spoken in Los Angeles before the American Academy of Allergy. His most notable item of news was called by the daily papers "A System To Make People ALLERGY-PROOF." He has been working with a preliminary drug called '1935L', which acts as a HISTAMINE-LIBERATOR, and it has caused a great improvement in clinical allergy. . . . Dr. Halpern is working toward an improved drug of that sort and hopes to find one which will completely clear the tissues of histamine.

Another piece of news from Arizona hospitals is the election of A NEW PRESIDENT. Guy M. Hammer, administrator of the Good Samaritan Hospital in Phoenix is the new 'boss' (which is an easier name than 'administrator' or 'superintendent') of the Arizona Hospital Association. . . . The other officers were spread around the state, with James Cline of Globe and Florence Ladner of Casa Grande on the slate.

Upjohn's weekly 'Scope', a newsy publication, had a picture of fifteen contenders for the NATIONAL JUNIOR AND BOYS' TENNIS CHAMPIONSHIP, all of them SONS OF PHYSICIANS. . . . The Arizona angle is the fact that two of the boys were SONS OF PHOENIX M.D.'s, — Paul, son of Dr. P. V. Palmer, and Rusty, son of Dr. K. C. Baker. . . . This is a fairly high percentage of doctor's sons, and of contenders.

Proof that sweating, and ODOROUS SWEAT, can be managed is now available. Odor is not an intrinsic property of apocrine sweat, but is due to the action of surface bacteria. It has been shown that an antibiotic ointment (Abbott's Bacitracin-Neomycin) will suppress the wicked germs all by itself. . . . The routine of getting rid of axillary hair, washing the area daily, and keeping the clothes clean is probably a good idea, but it is good to know of the ointment as a clincher. No excuse now unless the sense of smell is gone.

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MALPRACTICE SUITS The Physicians Liability For Negligence of Third Persons:

By Jesse D. Hamer, M.D.

Medico-Legal Committee

Phoenix, Arizona

IN A NEIGHBORING state last year, three malpractice awards in three instances totalled \$600,000, with dozens of smaller awards amounting to a much larger figure, were adjudicated against physicians. One of these, amounting to \$250,000, was awarded against a surgeon, who had delegated a technical procedure to a senior resident in a hospital, and the claim was predicated upon permanent paralysis following translumbar aortography with sodium urikon. It was alleged by the plaintiff's attorney that the surgeon had wrongfully delegated the procedure to a senior resident, and that more than the recommended amount of urikon had been used.

Action to recover damages for malpractice is grounded in negligence. The law does not presuppose that for every injury there must be a recovery. Negligence arises only from a breach of physician's legal duty, which is to exercise ordinary skill and care and his best judgment. What are his responsibilities then when he delegates certain technical procedures, or treatments to a third person; his office nurse, or intern or resident staff of a hospital, or to members of an operating crew during surgical procedures?

Let us examine in brief the physician's liability for negligence of third persons. It can be said that well defined rules have been handed down by the Courts in past instances, and these do impose liability upon a physician for injuries sustained by his patient by reason of negligence of third parties.

First, there is the doctrine of respondeat superior, which is applicable only when the relation of employer and employee exists. This type of relationship is established, when it is shown that the physician has the power to select, discharge, direct or control his assistants. Then if an employee causes injury to a patient while carrying out the physician's directions, the physician will be liable for injury sustained by a patient if the employee acted negligently. That rule can be applicable to an office nurse, or to a sponge counting

nurse hired by him in an operating room, should she count the number of sponges erroneously, and one be left inside the abdomen.

Negligence of nurses or other employes of a hospital is not imputable to a physician, unless it is established either that the physician controlled the hospital, or that a hospital nurse was incompetent and that the physician knew or should have known of such incompetency. In most instances, a physician is not responsible for mistakes or negligence of persons hired by a hospital. However, proof that a sponge was left in the abdomen places upon the surgeon the duty of proving the methods used to keep track of the sponges used in the operation, and that he acted in accordance with accepted surgical practice. The duty placed upon the surgeon of producing such evidence is frequently referred to as the duty of 'going forward' with proof to overcome the presumption of negligence. The duty of 'going forward' is not to be confused with the burden of proof which is on the patient. The duty of 'going forward' may shift, but the burden of proof never shifts; it is on the patient in the beginning and remains there to the end.

Quite generally, we physicians have believed that the rule says that we may be liable for the malpractice of a partner, or liable for injury thru the negligence of our assistants, agents or servants employed, but that we are not legally liable for the nurses or internes or employes of a hospital, unless the hospital is owned or controlled by a physician or physicians.

In the last twenty years, malpractice suits, over the country generally, have been rather numerous. There appears to be some departures from some of the previously established principles, in more recent years. Whether such departures are justified can well constitute a matter of difference of opinion. Nevertheless, as cited previously, a surgeon was handed a quarter of a million in damages because of the alleged negligence of a hospital resident. In another case in Pennsylvania, a verdict was reversed upon a doctor, upon appeal, because a child sustained damage to the eyes, after a caesarean operation, when its eyes were cared for by an intern. The doctor directed that a certain intern should be his assistant and take care of the baby after delivery. It was contended that the baby's eyes were not irrigated properly

after instillation of silver nitrate, as required. In this case, plaintiffs did not claim that the doctor was personally guilty of negligence. The question was whether the doctor could be held, under the doctrine of respondeat superior, for the negligence of the intern; or in other words, whether the intern was the agent or servant of the doctor. The next question in the case was whether the intern, an employe of the hospital, could be the agent or servant of the doctor. It was up the jury to decide, after the doctor had admitted, under cross-examination, that all of the persons in the operating room were subject to his control or right of control with regard to the manner in which they performed their duties. This is always an important test in determining whether a person is an agent or servant. The Pennsylvania Court said:

"If then it be true that defendant has supervisory control and the right to give orders to the intern in regard to the very act in the performance of which the latter was negligent, it would follow, according to the classical test of agency, that a jury would be justified in concluding that the temporary relationship between defendant and the intern was that of master and servant, and that consequently defendant was legally liable for the harm caused by an negligence on the part of the intern." The Court held further: "In determining whether the intern was defendant's servant at that time, the mere fact that he was then in the general employ of the hospital would not prevent the jury from finding that he was also at that same time the servant of the defendant, if he was then subject to his orders in respect to the treatment of the child's eyes with the silver nitrate solution."

Some subsequent cases in the same state have only somewhat limited the effect of the rule laid down in the above case. The inherent danger of this kind of a situation remains apparent, however.

In 1914, Judge Taft in *Ewing v. Good*, established the general rule that the doctrine of **Res Ipsa Loquitur** is not applicable in malpractice cases, but since that time, particularly in more recent years, many cases have been decided against doctors which are exceptions to that rule. *Res ipsa loquitur* is merely a short way of saying that the jury may be

warranted in believing that an accident of a particular kind commonly does not happen except in consequence of negligence; and, hence, there is a presumption of fact from which a jury may find that it happened in consequence of negligence, unless the defendant produces evidence of the actual cause of the injury. The principle upon which the rule rests and the circumstances under which it should be applied are these: It is not the injury, but the manner and circumstances in which the injury was sustained that justify the application of the rule and the inference of negligence.

Generally, this rule is not applied to the ordinary malpractice case, the reason for not applying it being that a physician or surgeon does not undertake to insure a good result and the result of medical treatment or surgery is not so certain that an inference of negligence attends a failure to effect a cure. However, when the rule of *res ipsa loquitur* is allowable in a case, it raises a rebuttable presumption that the physician was negligent, thus entitling the patient to have his case decided by a jury unless the circumstances surrounding the injury are satisfactorily explained by the physician to the satisfaction of the Court.

The highest tribunals of some states have held that an explanation, not improbable in itself, uncontradicted either by the results of cross-examination, or by direct evidence contrary to the explanation, entitles the defendant physician to a dismissal of the complaint or the direction of the verdict. Courts of other states have held, however, that the explanatory evidence is almost always to be submitted to the jury. In such states, a surgeon cannot relieve himself from liability for injury to a patient in leaving a sponge in the wound by any custom or rule requiring the nurse to count the sponges used and removed, and his reliance on such statements, even though such testimony is uncontradicted.

What does the effect of departures from the rule that the doctrine of *res ipsa loquitur* does not apply, in a malpractice case? Its effect is to permit a bad result or an unusual happening to require the physician or surgeon to explain, and to, perhaps, establish a *prima facie* case for the claimant. In other words, the burden of proof may be shifted from the claimant to the physician or surgeon.



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Organization PAGE

CIVICS

By Norman A. Ross, M.D.

MENTAL HEALTH IN ARIZONA, a report of a survey conducted by the Governor's Arizona Mental Health Research Committee, is available to members of this association on request. Address: (MH) University of Arizona Press, University of Arizona, Tucson, Arizona.

HIGHLIGHTS OF RECOMMENDATIONS

The recommendations that follow are based on the replies of 1064 representative Arizonans to the questionnaires which constitute the basis of the report. Special attention should be given to the fact that while some problems are accepted in Arizona as within the province of the State or of state controlled agencies, others are usually considered to be the responsibility of the local communities.

STATE LEVEL

1. A central board should be established to conduct a more searching investigation of the mental health needs of the State and to coordinate state mental health agencies. The eventual goal should be a combining of the functions of this central board and the advisory and coordination activities of the State Division of Mental Health.

2. Training facilities of the State should be expanded to include programs in clinical psychology, social work, psychiatric social work, psychiatric nursing. This expansion can be accomplished both through development of the services of the Western Interstate Commission for Higher Education (WICHE) in mental health areas and development of additional training facilities at the University and the State Colleges.

3. New institutional facilities for juvenile delinquents with serious mental conditions should be established in the State, and mental health functions of our present institutions should be extended.

4. Provision should be made to increase the staff of the Arizona State Hospital with the view to hastening recovery of patients and their return to society. Increases in the hospital staff

should be made selectively, with the object of approaching more closely the standards of the American Psychiatric Association.

A neurological institute in conjunction with the State Hospital with outpatient clinics in both Phoenix and Tucson should decelerate the expected increase in mental problems and should save long periods of hospitalization for many individuals with acute mental problems. The establishment of such an institute merits serious consideration, especially in view of the near certainty that the proportion of aged persons in Arizona will before many years match that of the nation, thus bringing about an increase in neurological problems.

5. Funds should be provided for support of mental health research in the institutions of higher learning and in other appropriate state agencies.

6. Arizona should cooperate with WICHE in setting up a research information center to report research proposed, in progress, and complete. Such an agency should publicize the availability of funds for research in mental health.

7. Traveling clinics should be established by the State Division of Mental Health to serve the small towns and rural areas of the State. It would be desirable to have two such clinic teams each consisting of a psychiatrist, a psychologist, and at least one psychiatric social worker. Aid for the support of such traveling clinics would be available through the National Institute of Mental Health.

8. The services such as those provided by the Arizona Children's Colony will have to be expanded to meet the growing needs of the state.

9. Penal and correctional institutions of the State should be provided with the services of a psychiatrist, a psychologist, and one or more social workers.

LOCAL LEVEL

1. Aid should be given in local areas to increase the psychiatric services available in

private hospitals. Saint Mary's Hospital in Tucson and Saint Joseph's Hospital in Phoenix are both seeking financial support for the establishment of neuropsychiatric wings. Residents of Arizona should aid these and other hospitals in attaining such goals.

2. Psychiatric facilities and services of the county hospitals should be improved.

3. Adult psychiatric clinics are needed in the more populated centers of the State. Minimal professional staffs for these clinics should consist of a full time psychiatrist, a psychologist, and at least one psychiatric social worker. Although the initiative for these clinics must be taken locally and a part of the money needed must be raised locally, some aid for such clinics is obtainable from the National Institute of Mental Health through the State Division of Mental Health.

4. The child guidance clinics in the Tucson and Phoenix areas should be enlarged in order to shorten the waiting period for service from these agencies. Minimal staffs for these clinics should include one full time psychiatrist, one or two psychologists, and two psychiatric social workers. Other communities should be encouraged to establish child guidance clinics when feasible.

5. The social service agencies throughout the communities of the State need more professional workers. In many there are vacancies. These can probably be filled only by increasing the attractiveness of employment. Salaries must be increased and working conditions improved. (Note: Social service agencies should be understood to include all public and private agencies engaged in mental health activities.)

6. The mental health facilities of the public schools should be continued and strengthened.

THE PROBLEM OF THE AGED

In Arizona responsibility for aged persons who require care and who cannot be taken care of in their homes is recognized only in a very limited degree by the State government, as, for example, the Pioneer's Home. Care of the aged by the county varies markedly from county to county. This report shows that the aged constitute a major percentage of inmates of state mental hospitals, where the aged are usually classed as mentally ill although many of them need only domiciliary care. Additional

provision should be made for these citizens and without the "stigma" of mental illness. Domiciliary care for the aged will allow for major economics in our State plan because such homes for the aged are far less expensive than are mental hospitals.

The problem of the aged is one that will increase with increasing population and with stabilization of the population.

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REPORTING PERSONAL INJURIES*

By John J. Barton

Attorney John J. Barton, Los Angeles, presents an attorney's viewpoint of the medical report prepared in connection with automobile accidents. The author is a member of the California and Nebraska Bar Associations and prior to entering private practice, represented automobile insurance companies as both attorney and claims adjuster. — Editor

WITHOUT the advent of automobile liability and medical pay insurance, medical reports would not have assumed the importance they have today. Because of insurance, the demands of the parties who are to be affected by the benefits weigh heavily on doctors. I often wonder if the medical profession realizes the importance of reports and how they affect the outcome of negotiation between the injured party and the insurance company — and subsequent law suits.

Does the medical profession realize, for example, the weight their reports are given by the insurance claims department when a bodily injury claim is presented? I am sure that if such were the full realization, meager and incomplete reports would never be submitted. Yet this is not the case. Either from lack of time or interest, the medical profession often refuses to render the report a patient is entitled to.

As most doctors know, an injury sustained by a patient because of the negligence of another is compensable to the injured party. In most cases, the negligent driver has liability insurance and a claim will be directed to the insurance company. Once a claim is presented, the insurance company will be represented by experts in their respective fields. This is only natural since paying or resisting claims is their business, and in order to compete, these companies must have men thoroughly experienced in their fields. The claimsman is usually well versed in medical matters as well as the legal aspects of a claim. Yet if his training or experience is deficient in the medical aspects of the claim, he has merely to call in a trained insurance doctor who will give a thorough medical examination and submit a comprehensive report.

SHOULD REFLECT ENTIRE PERSON

The claim can be presented either by a pa-

tient acting as his own negotiator or represented by counsel who negotiates for him. In the latter event, the status of negotiation becomes more balanced since, against the array of experts for the company, the patient's attorney should be able to negotiate successfully. In either situation, the medical report of the doctor and how it is written, will play a predominant role in the negotiation of the claim.

Other things being equal, a well-reported injury will be worth considerably more than an injury of the same type poorly reported. This is so because the claimsman of the insurance company relies so heavily on what the medical report shows. He may never see the patient and in most cases, the person in charge, the claims manager, who finally decides the value of a case, never sees the injured party. His only evidence of the nature of the injury is the medical report. This to him is the person. Because this is so, the medical report should reflect the entire person as much as possible. It should be a "word-picture" of the injured party.

Other than oral reports of an injury, which are not practical, there are only two methods of submitting written reports. These are the "form report" and the "narrative report." Let us examine the merits of each separately.

THE 'FORM' REPORT

A form report is usually a one-page affair on which a doctor is asked to record all he has observed concerning his patient. In effect, it is expected that the doctor can give a true "word-picture" of his patient by this means. The shortcomings of this method are all too obvious. The only benefit this writer can see in the use of this method is that it saves time for the doctor and the insurance company. The doctor has a greater duty to the patient than he does to himself. The doctor should always keep in mind that this form was prepared by the insurance company and not by his patient.

How many doctors can rightfully report the x-ray findings within a space 1 inch wide and 6" long as provided by the form report? If they could, the roentgenologist would be remiss in his report to the attending physician. Such, however, is not the case. The roentgenologists' reports this writer has seen are the most thorough of medical reports. Their reports of x-rays taken, whether there be injury or not,

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will invariably constitute a full page. The entire report of the roentgenologist should be incorporated in the attending physician's report, since it constitutes a major portion of the "word-picture" of the patient. To give the conclusions only, is to fail the patient in presenting this complete "word-picture." How incomplete the form report is can nowhere be better illustrated than in reporting the x-ray findings.

All doctors realize that when a patient comes to them with a history of an injury, the doctor owes the patient a thorough examination. How can an examination be thorough if the doctor uses the form supplied by the insurance companies as a guide? Even though the doctor may not use the form as a guide in examination and treatment, yet he does so when writing the report on the form.

I believe that the doctor usually conducts a very thorough examination but that when he tries to record what he has observed onto the form, finding it inadequate, he nevertheless proceeds to answer the questions as contained in the form.

NEED COMPLETE REPORT

What of the patient's history of the accident? Has there been an examination of his head even though no complaint of head injury has been made? The doctor owes his patient this examination, yet the form makes no provision for it. Undoubtedly, the doctor makes this examination as a matter of good practice, but in using the form he fails to make it known, unless he does find an injury. Reference should be made that the head was examined, even though no injury was located. This information is a vital part of the "word-picture" of the patient.

The same can be said of the skin, eyes, teeth, tonsils, throat, thyroid, heart, blood pressure, lungs, abdomen, genitourinary, extremities, neurology and spine. Without some discussion of these, how can a doctor expect a claimsman to get a full "word-picture" of the patient? In fact, how can the doctor expect anyone to believe that a thorough examination has been given if the same is not reported? The form is inadequate to meet these demands of good medical practice.

How many doctors can diagnose a personal injury without knowing something about the facts of the accident? It is not intended that the doctor know the technical facts, but he

should learn, in order to facilitate his diagnosis, the nature of the impact, i.e., was the patient seated behind the wheel, or where was he seated? This is important, as it may indicate the area and extent of the injury.

Also, the doctor must ascertain how the patient was thrown about. It is readily recognized, for example, that the patient's injuries and subjective complaints will usually be different if he is thrown to the pavement than if he were thrown onto a lawn. If he were not thrown from the car, then it is important to know what part of his body came into contact with what part of the car. The form is inadequate to cover this important aspect of the case.

WORD-PICTURE IMPORTANT

Nor does the form provide any space to describe the type or locale of pain. The type and nature of treatments are also important because they bear directly on the important subject of pain and suffering.

At this point, the doctor may question the importance of pain and suffering. The injured party is entitled to compensation for pain and suffering as a part of the total settlement. Although the doctor cannot accurately know the degree of pain and suffering, yet from his training and experience he knows the comparative aspects involved. He knows that certain injuries are more painful than others. He should record this observation, together with the subjective complaints of the patient. Only by doing this does the doctor help report the true value of his patient's case. The form makes no provision for this important aspect of the total "word-picture."

Where there is injury of a permanent nature, the medical form becomes glaringly inadequate. Any doctor who has completed forms for the industrial accident commission knows that a statement by the attending physician as to permanent disability must be backed by reported facts. So in auto accidents, the reporting physician must be thorough in order that the client may obtain just compensation.

The medical form contains space for prognosis. To this writer a prognosis is merely a calculated guess. In very few types of injuries, a prognosis can be given with some degree of accuracy. But this is more the exception, in personal injury cases, than the rule. Because the guess of the attending physician could be detrimental to the

patient's subsequent negotiations, it is submitted that the doctor use this mode of approach sparingly. A flat assertion as to an early prognosis can prove very embarrassing to the doctor and costly to the client should the injury prove of greater duration than was expected.

RESERVES GAUGED BY REPORTS

The medical report forms are submitted by the insurance companies for a number of reasons. The forms are sent out in the hope of getting the earliest possible report so that the company can post a reserve. This is a figure within which the company hopes to settle the case. If the medical report is poorly written, the reserve may well reflect this by being lower than the case value really is. However, if the report is thorough and accurate, the reserve will better reflect the true value of the case.

Insurance companies will seldom settle a case above the reserve posted. It is true that some companies will adjust their reserves, but this is done only because the first reserve posted was estimated without the medical report. Not only is this form used as a means to gauge the potential exposure of the insurance company, but it will divulge much information that may not be to the client's best interest to reveal at that time. Of course, the insurance company has the medical man on the spot with an early report, and if his later report does not reflect consistency with the first report, this factor will be used as an arguing point in the negotiation of the claim. In fact, it may be used in cross-examining the doctor should the matter be tried.

Many doctors are in some sort of hurry to get a medical report form in to the company when there is medical pay coverage involved. They know that their medical bill will be paid promptly. Yet do they know that this same medical report may well find its way into the hands of the insurance company representing the third party? Because this medical information is confidential communication, I seldom permit an examining physician to send a medical report to the medical pay company until I have settled the bodily injury with the company representing the negligent driver.

Nearly all attorneys will protect the doctors on their bills, so why rush to divulge this information? Nor will the patient's rights be jeopardized under the medical pay provisions of the policy.

SHOULD HEAR NEGOTIATIONS

I am sure it would be quite an experience if a doctor could sit in and listen to the negotiations conducted between an attorney and a claims adjuster. I am confident the doctor would soon learn the importance his report plays in the discussion. In fact, because the report does play such a vital role in negotiations, the better personal injury attorneys rarely permit the claims adjuster to read the report. In fact, they read the report to the adjuster and never relinquished a copy until the case is settled. This prevents the adjuster from picking the report apart and arguing about the most unequivocal parts. The doctor should keep in mind that negotiations of a personal injury case are a dress rehearsal of the actual trial of the case, but with no holds barred except good deportment and proprietorship of language.

As an example of the misuse of prognosis, the ordinary neck injury arising out of the so-called whiplash effect, lends itself readily to discussion. In many of these cases, there may be some latent injury, yet the doctor may believe these are only subjective complaints and therefore give a very optimistic prognosis that the patient should recover at a very early date. It becomes very difficult for the patient or his attorney to convince the insurance company, should his pain continue beyond the prognosis submitted by his attending physician. In fact, it becomes almost impossible once the patient has been examined by the insurance company doctor.

BE WARY OF PROGNOSIS

It is better policy from the patient's standpoint to forego any statement about prognosis and use this only when treatments to the patient are nearing an end. Of course, if the patient is fully recovered, the doctor must so state. Yet many examining physicians rightfully hedge, even at this late stage, so that they will not be caught short should the patient have a relapse. Many of the experienced doctors, that is, those who write reports for plaintiffs attorneys, skip this heading entirely and close their reports under any one of a number of headings such as "Comments," "Conclusions" or "Analysis."

Another reason that the insurance companies seek these reports at an early date is that they want to learn whether the persons involved should be examined by the insurance

company doctor. I am not saying that the insurance company is not entitled to an examination. The question of when a client should be permitted to be examined by the insurance company doctor is one on which many personal injury attorneys are in disagreement. I think it depends upon the nature of the injury, the experience had with that particular company in past claims negotiations and the stage of the treatments.

Where the form must be used, however, and this will usually happen where the patient is not represented by counsel, the doctor should not go out on a limb in completing the form. He has a right, and in fact a duty, to reserve judgment. I believe that even where the patient is not represented the doctor owes him the duty of submitting a final report in narrative form. Because of this, the doctor should be extremely conservative when completing the preliminary form report, if he desires to submit such a report.

COMPENSATION IN ORDER

One of the commonest complaints of doctors concerning the narrative report is that it is time consuming. What the doctor really means is that it is effort exerted without compensation. But need this be the case? Most plaintiff attorneys will gladly pay a nominal fee for such a report. This is in addition to the regular charge for the treatments. A good narrative report may take as much as one hour of the doctor's time. His time and knowledge expended in completing this report is readily worth the charge. The injured patient's attending physician is rightfully entitled to a charge for a thorough narrative report.

Where the patient does not have an attorney, the doctor cannot expect the patient to react favorably to such a charge, since he seldom realizes the service that would be rendered him in submission of such a report. Where an attorney asks for a report, the doctor should first reach an understanding with the attorney as to the charge. The charge, of course, will depend upon the time spent, which is usually related to the seriousness of the injury.

A narrative report should be broken down into subheadings. I have seen them run three or four pages without subheadings. This proves both burdensome and difficult for the attorney and the insurance company when they attempt to reach some decision as to the value of the

case. A report with subheadings also gives the attending physician a guide when dictating his report so that he will cover all phases of his examination and treatment.

SUGGESTED SUBHEADS

There is no set pattern for subheadings. However, they should be used to bring out a true "word-picture" of the patient, his injuries, pain and suffering, treatment and permanent disability, if any, and possible time off to recuperate. The topical outline should be flexible enough to cover any type of injury. If it is not, the doctor should be ready to vary the outline to meet the specific needs. As a suggestion only, the outline might contain these headings.

1. Statement of the injury, covering briefly the facts of the accident.

2. Past history of injury and sickness.

3. Visual characteristics of patient's over-all characteristics:

a) height; b) sex; d) age; e) general physical appearance; f) general mental response.

4. Head.

5. Skin.

6. Eyes.

7. Teeth.

8. Tonsils.

9. Throat.

10. Thyroid.

11. Heart.

12. Blood Pressure and Blood Count.

13. Lungs.

14. Abdomen.

15. Genitourinary.

16. Extremities.

17. Neurology.

18. Spine.

19. x-ray.

a) verbatim transcript of the report submitted by the roentgenologist; b) Roentgenologist's conclusions; c) Attending physician's explanation of these comments and any further comments of his own.

20. Diagnosis (Break down into component parts and show how each relate to the other.)

21. Analysis, Comment or General Conclusions. (This heading in lieu of prognosis.) It should include any time off from work.

Most of these subheadings are self-explanatory. Most doctors will readily understand the reasons for examination of the particular parts and their relative importance. All doctors will readily understand why a blood count should be taken. As they know, a change in the blood count of an injured victim can tell much about his condition. So too, might the other tests recommended. These tests and examinations are not time consuming and by performing them the doctor is only rendering the type of service to which his patient is entitled. If the respective

parts examined are normal or if any of the tests are neutral, the doctor should so state under the appropriate heading. This is an indication that the examination was conducted and should satisfy all concerned.

DISABILITY IMPORTANT

Among other matters, the doctor should discuss, under the "Conclusion" heading, the amount of time the patient will be disabled and unable to work. If there will be any temporary disability, the total time should be recorded. This aspect of the report is very important, for should the patient be unable to continue employment, without the doctor's confirmation, most insurance companies will rightfully make no allowance for the medically unverified loss of earnings. Also, in this same section, the doctor should make some estimate of the future medical bill, together with a statement of the bill to date.

Nearly all attorneys will agree to protect the doctor on his bill from the final settlement. Where, however, there is no attorney on the case, the doctor should have the patient sign a lien form and this should be sent to the insurance company by registered mail. Where the patient will not, or through an oversight has not signed, the doctor should still put the insurance company on notice that the medical bill is outstanding. Although insurance companies need not honor this request, many of them do as a matter of courtesy.

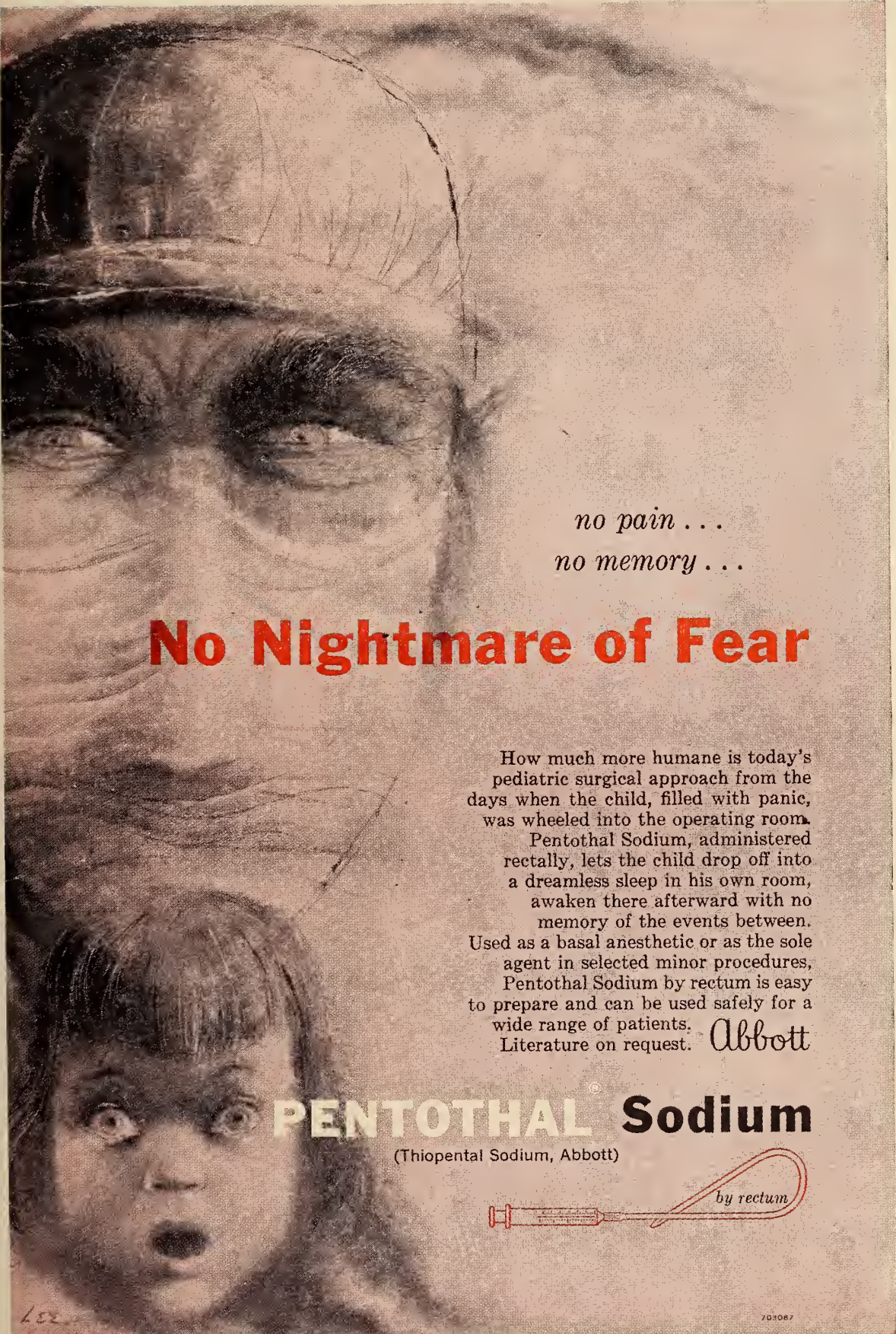
Many doctors will send the medical bill to the insurance company without the patient's or attorney's consent. This bill is just as much a part of the confidential communication between patient and doctor as the report. The doctor should direct the insurance company to the patient's attorney, in the absence of written authorization to divulge this information. Too often the doctor discusses matters in the bill other than the cost of treatments. Even if this is not the case, the bill should remain a part of the confidential report.

Where there is an attorney in the picture, the doctor should feel free to consult with him concerning the form of the medical report. Often he can offer many good suggestions. This is both proper and ethical, since the way the report is written may very well determine the outcome of the claim. Report writing should be elevated to a position of prime importance.

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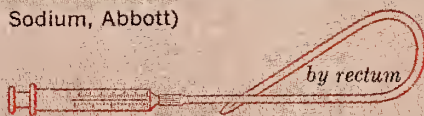
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FEDERAL AID TO EDUCATION

By L. D. Sprague, M.D.

IN AN address before the House of Delegates at the Clinical meeting of the AMA in Seattle, Washington, Dwight H. Murray, president of the American Medical Association, spotlights a concept we have long held personally. Dr. Murray stated, "Physicians can no longer afford to remain aloof to problems on the international, national and local level — as doctors we cannot get away from them by claiming that our only interest is in the sick, and that we cannot be bothered by political, social and economic problems." The theme of this address is so fundamentally sound that we urge you to review it in *Arizona Medicine*, Vol. 14, No. 2, page 90.

In view of Dr. Murray's plea for a "united, forceful and informed profession" we shall present in the coming months topics of interest to Arizona physicians concerning international, national and local problems. It is somewhat difficult to be truly informed in this day of high pressure salesmanship (more aptly termed brainwashing). Much propaganda designed to further the interest of the propagandist rather than that of the public is fed through the press and other media of communication with wild abandon and with little attention to actual fact. The public therefore tends to read or hear one viewpoint, that designed to swing public opinion to sympathy with and support for that which the propaganda machine wishes. We shall try and present factual information from documented sources, it may not at times agree with that found elsewhere, it will, we feel, present food for thought, and a more informed profession.

"WE ALL have an inescapable responsibility to fact facts as they are, not as we wish them to be. We occupy positions of leadership and influence in our communities, some official and some unofficial. As such, we are exerting an influence either for or against the order of things now existing." These are the words of Mr. W. C. Mullendore, President of the California State Chamber of Commerce in an address before the Thirtieth Annual Sacramento Host Breakfast, Sept. 1, 1956. Certainly as doctors and citizens of our state and great country we are exerting an influence either for or against the order of things now existing. Unless we are alert and informed, by our apathy and indifference we give credence and approval to that which we could otherwise discredit and disapprove. The present controversy over Federal Aid to Education is but one subject about which doctors should be informed. Federal Aid to Education is likely to become law in the 85th Congress unless enlightened citizens vociferously oppose it. The professional educationists headed by the National Education Association have built an enormously effective propaganda and lobbying machine. Much of the propaganda is fictional, nevertheless they have used it so

effectively and cleverly a majority of Americans gullibly have accepted as fact these excuses for federal aid — "A national educational crisis — a dire emergency — classroom shortages — persecuted and underpaid teachers — disgraceful shortage of teachers." These are some of the attention getting slogans which have been scattered far and wide for public consumption. Ironically the Parent Teachers Association, at least their national and most of their state leaders, favor federal aid. In our own state legislature in recent weeks one Republican representative joined with two Democrats in the House in introducing a memorial to Congress for federal aid to education. The memorial attempted to soften the threat to states' rights by stating that "any funds granted should continue to permit the states to formulate policies and procedures since it is agreed that administration at the local level provides maximum of efficiency and educational advantages to the school children of our nation." The National Education Association attempts to convey this same impression that federal aid can be had without federal control.

The erroneous concept of "federal aid without federal control" must be debunked! A 1942 de-

cision of the Supreme Court reads as follows: "It is hardly lack of due process for the government to regulate that which it subsidizes." In 1916 Congress passed the Smith-Hughes act providing for federal aid to vocational educational programs. Its proponents shouted from the housetops that its passage would not bring about federal controls, but exactly the reverse has happened. Regulations have been expanded by the federal government over the years to the point that it now requires some 108 pages of print devoted to administration of vocational education. The late Representative Lesinski of Michigan who in 1950 was Chairman of the House Education and Labor Committee which devoted a great amount of time to the study of federal aid to education stated after his committee had killed the bill, "It is impossible to draft a general federal aid to education bill which will not contain a great degree of federal control over local school systems — I am convinced that the hard study we have put to the question that no acceptable bill preventing federal domination of local schools can be drawn — I reluctantly come to that conclusion, but I had to face the facts." (Chairman Lesinski prior to the committee's study was a student of and an ardent advocate for federal aid to education.) There are many sound, logical and moral reasons against federal aid to education to counteract the nebulous arguments advanced for it by its proponents. One of the most convincing is the report of the Education Committee of the President's OWN Commission on Intergovernmental Regulations which stated: "We have not been able to find a state which cannot afford to make more money available to its schools or which is economically unable to support an adequate school system — federal aid is not necessary either for capital expenditure for new school buildings or for current expenses for public schools!"

The widespread fallacy that in federal aid someone else pays the bill must also be denounced. It's as simple as this, the federal government has nothing to give except that which it first must take from you in the form of taxes. In the process of giving it is also very wasteful of your money. Dr. Charles W. Pavey aptly describes this as "federal aid is like taking a quart of a patient's blood, giving him back a pint, and telling him he ought to feel better

now that he has had a transfusion!" An article, "The Biggest Con Game in Politics" by Alfred E. Driscoll, former Governor of New Jersey, December issue of Readers Digest, is a revealing lesson on how federal grants-in-aid are this fiscal year adding five BILLION dollars to your federal tax bill. Waste and extravagance are almost built into government spending. There is also a well founded theory that big government spending reaps a harvest of votes and it has become a habit with some of our representatives to vote for something in the interest of political expediency rather than what is best for the best interest of his constituents. Voters should wake up to the fact that they are putting in more time working for taxes than for food and other items of necessity! We might appropriately ask how happy are you with your own federal income tax bill this year? If a private trustee were as wasteful of the funds of his beneficiaries as is the federal government of the taxpayers' money that trustee would be restrained and removed by any honest court in the country. Unfortunately the government can only be restrained by the outraged clamor of the American people, amplified by the resolutions of their state legislatures. Senator Byrd, Chairman of the Senate Finance Committee, recently stated: "Why may I ask, for example, should the Federal Government embark upon a \$2 billion local school construction program and the health insurance program proposed in the budget pending? This will open up a Pandora's box of federal spending. These two alone will cost billions. They start as a mouse and quickly grow into the size of an elephant. It is time for the American people to realize that while we have great potentialities of wealth, there is a limit beyond which we cannot go. We must realize that creeping paternalism of the federal government is just as bad as creeping socialism. The end result is the same — the destruction of the principles of our free government." Some way, some how, informed patriotic citizens must bring enlightenment to parents and teachers that federal aid is not "something for nothing."

The American people are not doing too poorly by their schools. The United States has the highest per capita expenditure for education and spends a larger share of its national income on education than any other nation. During the past five years 1950 to 1955 state and local

expenditures for public schools increased by 73%. The shortage of teachers in classrooms is somewhat of a myth and local and state communities are keeping ahead of their educational problems WITHOUT federal aid. The figures on public school enrollment and school construction compiled by the U. S. Office of Education are informative in this regard. The net result shows that in the last ten years classrooms provided in communities and school districts all over the nation were in EXCESS of the increased enrollment. Strangely enough you never hear these official government agency figures quoted by those in Washington, columnists or school lobbyists who continue to speak of federal aid to school construction only with supercharged adjectives like "pressing," "critical" and "imperative." The number of teachers in the public schools increased 69,000 from the fall of 1954 to the fall of 1955. It would appear that there are many flaws and weaknesses in the argument that there is a need for federal subsidization of the schools and that federal aid will solve so-called educational problems.

Perhaps nowhere has the case against federal aid to education been put better than by the Public Expenditure Council of the State of Connecticut: "It is infinitely more important that we settle down to sound thinking on the values of local participation and local citizen control of our schools, and finance them with the resources within our states, than to chase our own tax dollars through the depreciating process of federal bureaucracy and have them come back to us worth much less and accompanied by dictates on how we shall use them."

It is imperative that your elected representatives be informed concerning your stand on important issues of the day. Otherwise they may vote for what they feel is "political expediency" prompted by the flood of the propagandists' psychopolitical pressure. A true grass roots approach can cure many of the ills of our Constitutional Republic long suffering under the load of federal bureaucracy. Do your part now, it's later than you think. The depression "that will curl your hair," assuming that the Federal Government has left you anything to curl, can be avoided only by reducing needless government expenditures of the taxpayers' money.

THE MONTH IN WASHINGTON

WITH CONGRESS now well along in its session, the list of health and medical bills totals several hundred. Some are minor — and few persons will be affected regardless what happens. Others just don't make much sense — and the committees, regardless of politics, can be trusted to let these measures die a peaceful death.

But there are scores of others — all important bills — that have some chance of passage, their prospects ranging from an outside possibility to a strong probability. At this stage they can be regarded as the raw material out of which will come the studies, the debates and the arguments in the months ahead.

One of the major health-medical issues is federal aid to medical, dental and osteopathy schools. On this the administration wants grants for construction and equipment only; some of the Democrats want to include money for operating expenses as well.

In number of bills introduced, the general subject of problems of the aging probably tops the list. And that is no surprise. For several years welfare workers, housing experts and recreational leaders, as well as physicians, have been looking for ways to help the retirement age population. Recently a special center was set up within the Institute of Health to devote its time exclusively to the aged. Outside government, voluntary groups have also been at work on the same subject.

Now the ideas developed by the years of discussion are coming to the surface in the form of legislation. Several of the bills would set up commissions, appointed either by the President or Congress. Another recommends that an existing House Committee make a study of the aging, similar to that suggested for the various commissions.

The commissions and committees would have one thing in common: They would further study and investigate in a field that many persons believe already has been plowed and replowed by investigators.

Several lawmakers want to get going right away. They would set up within the Department of Health, Education, and Welfare a new Bureau of Older Persons, which immediately would start out to solve some of the problems

through grants, demonstrations and more research.

Most controversial of the "help the aged" bills is one originally proposed by the then Social Security Administrator, Oscar Ewing, in 1951. It would allow 60 days a year of government-paid hospitalization every year for persons covered by OASI after they reach age 65. They could have this free service whether or not they were on retirement.

As in most Congresses, those who want to get the veterans more benefits and those who think they are getting too much already are coming to grips over new bills. Important in this group is a measure proposed by Chairman Teague (D., Texas) of the House Veteran's Affairs Committee that would tighten up procedures under which veterans with non-service-connected conditions receive hospitalization. But at the same time there is pressure from other quarters for a lengthening of the "presumptive periods" for various diseases. Where the law now states that a certain disease or condition will be considered service-connected if diagnosed within one year after the veteran's discharge, these bills would make the period two or three years.

Many other bills aimed at liberalizing veterans' benefits in various ways also are awaiting committee action.

Social security and taxes are other popular fields for the legislators. As expected, several bills call for lowering the age at which a disabled person can start receiving his social security pension, now set at 50. Many measures would change the income tax laws to allow more credit for medical expenses, and one proposes allowing the taxpayer to deduct premiums for health insurance from his income tax itself.

Of major interest to physicians and most self-employed is the Jenkins-Keogh legislation, which would allow deferment of taxes on a portion of income put into retirement plans.

Again, a number of lawmakers want the federal government to take a more active part in control of narcotics, barbiturates and amphetamines and treatment of addicts. One suggestion is to consider any shipment of barbiturates or amphetamines as part of intrastate commerce, on the theory that intrastate control is essential to interstate control. This and other bills

also call for strict record-keeping and registration (physicians excepted from these provisions).

A plan introduced in the last session and offered again would give the President the right to assume control over the production, distribution and use of any drugs or biologicals "for use in the prevention and treatment of disease."

Other medical bills will of course be introduced as the session moves on; those discussed here already are assured of considerable attention.

ARIZONA MEDICAL ASSOCIATION COMMITTEE ACTION

By Donald N. McLeod, M.D.

1. Legislation Committee.

ON JANUARY 31, 1957 a special meeting of the local membership of the legislation committee of the Arizona Medical Association Incorporated was held and several problems were discussed.

Following a request of the registered nursing profession seeking exemption of liability from the practice of medicine and the carrying out of their services with special reference to administration of medicine and intravenous injections, it was suggested that the Medical Practice Act be amended to provide; a. that this does not apply to any resident, intern, extern, technician, or nurse acting under the supervision or direction of a Physician and Surgeon duly licensed in this Association, so long as such resident, intern, extern, technician, or nurse does not hold himself out to the public generally as being authorized to engage in the practice of medicine; or b. that this does not apply to any resident, intern, or extern while serving in such capacity in an accredited hospital approved for the training of such resident, intern, or extern, nor shall it apply to technicians or nurses acting under the supervision or the direction of the Physician and Surgeon duly licensed in this Association so long as such resident, intern, extern, technician, or nurse does not hold himself out to the public generally as being authorized to engage in the practice of medicine; and c. this does not apply to Physicians and Surgeons living in other states who are duly qualified to practice medicine therein who shall be called in consultation in this

state by a Physician and Surgeon here legally entitled to practice medicine and surgery. Considerable discussion followed and it was decided that there is no need for providing further special exemption for those doctors called in consultation in this state by a Physician and Surgeon here legally entitled to practice medicine and surgery.

The Board of Medical Examiners of the State of Arizona have asked to be relieved of such duty and responsibility in the matter of patient sterilization procedures of the Arizona State Hospital. The Board believes that any board or committee sitting and making such determinations should have, within its membership a number of Psychiatrists. The Board is also concerned as regards to the cost of conducting necessary hearings and the time consumed in the carrying out of this function, particularly should there be any appeal from its decisions. It was recommended that the Board consider the matter of cost in the conduct of these hearings and if it is determined that the Board will not be in a financial position to carry on this service, the Board of Control of the Arizona State Hospital should include an appropriation therefor in its budget for the Legislature or the Legislature should be approached to provide a special appropriation for the function to fully cover expenses incurred.

Several bills were reviewed which were introduced in the 23rd Legislature, State of Arizona. The committee approved HB-15, an act relating to the prevention of hazardous dust and gas conditions and also approved HB-16, an act relating to occupational diseases and disability. No action was taken on HB-17, an act relating to public health and safety describing the method of reporting a contagious disease. HB-30, an act relating to agriculture and dairying permitting the retail sale of raw milk was disapproved.

The Arizona State Department of Health submitted for review rough drafts of bills proposed to be submitted to the present Legislature. As no opportunity as yet to review these bills by the committee was had, no action was taken.

In accordance with the recommendation of the Legislation Committee the matter of review and evaluation of the establishment of a State Medical Examiner system for Arizona versus modification and improvement of the existing

State Coroner system was referred to Arizona Society of Pathologists for study and recommendation.

2. Osteopathic Liason Committee.

The meeting of the above committee was held on January 31, 1957 in order to discuss a proposed bill which the Arizona Society of Osteopathic Physicians and Surgeons have indicated they wish to submit to the 23rd Legislature of the State of Arizona. This bill proposes to 1. eliminate the lay members in the composite of membership of its Osteopathic Board, realizing a board comprised of Osteopaths only; 2. Increase the compensation for its board members and secretary; 3. Provide that any unexpended, and unencumbered balance of its funds remaining at the end of the year shall not revert to the general fund, but be retained for future use by the board; 4. Increased power of the board in matters dealing with license application, suspensions, and revocations; 5. Eliminate the two years post graduate work requirement, providing instead a year internship prior to licensing.

Mr. Jacobson, counsel for the Arizona Medical Society has advised Mr. Divelbiss, counsel for the Osteopathic Society that, in the past, in matters such as this the attitude of the Association is as follows: where the public is not concerned and where it is a matter only of internal management the Medical Association usually takes no stand, believing this to be none of its concern; but where the public is concerned and where the public health might be affected (such as reducing the amount of training before an Osteopath be allowed to practice major surgery) the Medical Association frequently considers and usually does take a stand.

The main bone of contention of this bill is, of course, the cutting down of the amount of post graduate training that an Osteopath requires before he does surgery. The Committee in Medicine does not propose to stand idle and let a man come out of only an internship in a hospital accredited by the American Osteopathic Association, or its equivalent and do major surgery.

Another amendment in the proposed bill is that the Osteopath may designate himself and sign his name in any capacity, such as Osteopathic Physician and Surgeon, Osteopathic Phy-

sician, Doctor of Osteopathy, or he may use the designation of Physician and/or Surgeon as long as the initials D.O. follow his name without being required to prefix the words Physician and/or Surgeon with the word Osteopathic. The Committee in Medicine sees no reason to remove the designated Osteopathic title as this may only create confusion in the minds of the public as to the differentiation between an Osteopathic Physician and Surgeon and a Doctor of Medicine.

As to the use of any advertising statement of the character tending to mislead the public the Medical Committee advises that advertising of any sort should be prohibited in line with the ethics of medicine.

3. The Glendale Community Hospital.

It has been proposed to build a community hospital in Glendale and efforts have been made to realize the facility open to both Doctors of Medicine and Doctors of Osteopathy serving on a dual staff. Certain statements have been made for and against dual staff privileges and the local Doctors of Medicine have indicated their inability to so participate. A request was made by representatives of both healing arts to meet with the Board to discuss the problem.

GOOD SAMARITAN HOSPITAL RECOVERY ROOM A Progress Note

By Wallace A. Reed, M.D.

THE REMARK is sometimes heard today that "recovery rooms are a thing of the past." Evidence to the contrary is provided by the experience of Good Samaritan Hospital in Phoenix.

The Recovery Room, also known as the "Post-Anesthesia Room," was opened November 8, 1954. Three single rooms near the surgical suite were sacrificed to provide the needed space. The cost was considerable: \$11,000 for remodeling, \$5,000 for 10 Hausted stretchers, and \$4,000 for other equipment. Loss of revenue during the period of construction was not included as a part of the cost.

During the first two months, 637 patients were admitted. This number is slightly less than 50% of the 1296 patients receiving surgery during this period. In 1955, 6003 or 74% of the 8139 patients undergoing surgery passed through

the recovery room. In 1956, 6149 or approximately 73% out of 8497 patients spent their first post-operative hours in the recovery room. The summary of a "typical week" is shown in Table I. These results were obtained with a recovery room open from 7:30 A.M. to 4:30 P.M. Recently an evening shift has been added, so the percentage of those passing through the recovery room in 1957 will undoubtedly increase.

Early opposition on the part of some of the physicians has been replaced in most cases by favorable enthusiasm. This is borne out by the above statistics and by the fact that many patients who have received only regional or local anesthesia are ordered to the recovery room by their physicians for a further period of trained, uninterrupted observation. Here is another indication of the favorable reception the recovery room has enjoyed: In 1955, 62 patients from departments other than surgery were sent to the recovery room. These included patients from the outpatient department and some from x-ray who had been anesthetized. In 1956, this number increased to 97.

This 10-unit department is now open from 7:30 A.M. to 11:00 P.M. Monday through Friday, and from 7:30 A.M. to 4:30 P.M. on Saturday. It is administered by a charge nurse and an assistant, both of whom are graduates. Recently a third graduate was added to take care of the P.M. shift. As helpers they have two Senior students, three Junior students, and one Aide. They record each patient's condition on a pink sheet which becomes a part of the patient's chart. At their disposal they have excellent equipment: Hausted stretchers equipped with conductive rubber casters, conductive mattresses, side rails, restraint straps, a portable intravenous standard, and means of placing the patient in Trendelenburg's position; individual oxygen and suction units located in recesses in the wall; endotracheal tubes, laryngoscopes, a Kreiselman resuscitator; emergency drugs and syringes; a tracheotomy tray; miscellaneous articles such as Levine tubes and urethral catheters. They can avail themselves of a physician from the surgical suite within seconds.

There is no doubt but that several lives have been saved because of the recovery room. Also, many cases of potential shock are de-

tected and corrected by relatively simple means in incipient stages. This means a saving to the patient in terms of conservation of his strength as well as the avoidance of added financial expense which often goes with treatment of more advanced stages of shock. With dependable personnel in the recovery room, its presence helps to conserve the energies of anesthesiologists and surgeons. For they need no longer worry whether their semi-conscious patients are being attended. They know they will be notified upon the slightest indication of impending trouble. In the occasional case when one of the patient's physicians cannot be reached, some other M.D. is consulted regarding any necessary emergency treatment. The recovery room likewise saves floor nurses much physical and emotional wear and tear. For most patients are well out of danger by the time they return to their rooms. Thus the recovery room has proved beneficial not only to the patients, but also to floor nurses and attending physicians.

Many patients are relieved to know they will not be seen by relatives during their emergence period. To cite an example: Wives whose husbands have never seen them without their dentures are glad to know that they may have their teeth again by the time they return to their room. Most relatives for their part, are relieved to know they won't be responsible for watching over a loved one during their recovery period. It is, of course, quite important to notify both patient and relatives that the patient will spend some time in the recovery room before returning to his own hospital bed. At Good Samaritan Hospital, after a patient has been received from surgery, the recovery room supervisor informs the floor nurse. The floor nurse in turn passes the information on to the patient's relatives. It is significant that most patients express the opinion they are favorably impressed by the added services afforded by the recovery room.

The objective of establishing the recovery room was to provide additional safety and service to patients; consequently, the charge has been kept minimal. The average charge is \$5.00, and at this price the expense of operating the recovery room has been balanced approximately by income. It is the feeling of Hospital Personnel that the initial expense of

establishing the recovery room has been more than offset by the enthusiastic response accorded it alike by patients, nurses, and staff physicians. And it is the feeling of many Phoenix physicians that rather than being a "thing of the past," the recovery room is a vital necessity of the present.

Table I
"A TYPICAL WEEK"

| Type of Surgery | Number | Average hours in R.R. |
|--------------------|--------|-----------------------|
| T & A's | 31 | 1.4 |
| Abdominal | 30 | 2.1 |
| Pneumograms | | |
| Arteriograms | 3 | 1.6 |
| Cystoscopy and | | |
| Retrogrades | 7 | 1.4 |
| Chest | 2 | 1.4 |

"... To Work Effectively Together"

By Leo E. Hollister, M.D.

Veterans Administration Hospital
Palo Alto, California

... ONE OF the benefits from the introduction of tranquilizing drugs might be the development of a closer working relationship between psychiatrists and other physicians. Pharmacotherapy is as strange to most psychiatrists as it is familiar to most generalists. On the other hand, psychotherapy is as strange to most generalists as it is familiar to most psychiatrists. It now appears that a large segment of patients in the offices of both psychiatrists and generalists require both forms of treatment. The obvious solution is for psychiatrists and generalists to find a way to work effectively together.

"The first step in bringing about a closer relationship is for the generalist to learn more about psychiatry. The generalist frequently sees the potential psychiatric patient early in his disorder. To be able to determine which patient requires psychiatric treatment and which patient can be handled with "supportive psychotherapy" often requires considerably more diagnostic acumen than is provided by the usual psychiatric training offered by medical schools. This matter is of some importance. The excessively tired, impotent middle aged man may be a more likely potential suicide than a case of male climacteric. A man with alcoholic gastritis might have doubts

*Medical Times, October, 1956.

about his wife's fidelity which troubles him far more than indigestion — a trouble which he might attempt to solve by killing her. The young wife with every complaint in the book might be a candidate for a psychotic break upon the addition of a relatively small stress, such as the birth of a child or the transfer of her husband to a new city. Yet all these tragedies could possibly be prevented by early recognition of the psychiatric problem underlying the physical complaints. Clearly additional post-graduate training in psychiatry for generalists could yield high dividends.

"A second way in which psychiatrists and generalists might be brought closer together would be to establish psychiatric units in local hospitals. The introduction of the tranquilizing drugs has made feasible the care of all but a few psychiatric patients in general hospitals. Psychiatrists would benefit by being brought from the isolation of private sanatoria and State Hospitals to a closer contact with the general medical community. Because some psychiatrists prefer not to be responsible for the administration of drugs to patients to whom they are giving psychotherapy, the collaboration of the generalist might be quite welcome. Having two doctors might be of some advantage to the patient, for he can vent his gripes about the psychotherapist to the generalist.

"A third way whereby generalists and psychiatrists could work together effectively is in the supervision of maintenance therapy with tranquilizing drugs when the patient is discharged from psychiatric hospitals. More and more patients are each day being released from hospitals on continued treatment with the drug. They require the services of a medical man familiar with the use of these drugs, but not necessarily a psychiatrist. Many of these patients can be kept out of the hospital indefinitely with proper after-care. The well trained generalist is in a good position to carry out this function."

CANCER OF THE COLON AND RECTUM

THE TENTH in the Cancer Society's series of monographs on the early diagnosis of cancer for the practicing physician is now being distributed to over 190,000 physicians and medical

students. This publication, "Cancer of the Colon and Rectum," written by Dr. Frederick A. Collier with the assistance of Drs. Henry K. Ransom and William J. Regan, all of the University of Michigan School of Medicine, Ann Arbor, should be of great interest and of considerable practical value in the diagnosis of cancer in these sites.

"Cancer of the Colon and Rectum" is being distributed in the same manner as was the recent issue of "The Physician and the American Cancer Society." Both publications are being sent to all physicians in this state by the Arizona Division of the American Cancer Society.

CAMPAIGN NOTICE NO. 55

ATTACHED is proof of an ad especially prepared by the National office for medical magazines throughout the country. Again this year, emphasis is upon the "Fight Cancer With a Checkup and a Check" theme. The point is made that the check today means insurance for tomorrow; TODAY'S insurance is largely the checkup by the physician.

Included in the list of magazines to whom this ad is being offered are the publications of state medical societies. Our procedure for handling these journals continues to be as follows:

Upon receipt of an order for plates from any journal of a state medical society, we will ship the plates directly to the journal and will so notify the appropriate Division. This will provide an opportunity for the Division to contact the state journal to suggest that the name and address of the State Division be included in the ad. (The journal's printed can do this with ease.)

This procedure concerning the Division name will apply only to state medical journals, and only in those states where there is one Division of the Society.

This ad has been prepared in the following sizes: 5½" x 8", 7" x 10", 4¼" x 6¾".

Electros for state medical journals are supplied free. For other medical publications, the prices are as follows:

| Ad No. | Title | Size | Price |
|--------|-------------------|---------|---------|
| 1758 | One in Four . . . | 7 x 10 | \$15.50 |
| 1759 | One in Four . . . | 5½ x 8 | \$10.75 |
| 1760 | One in Four . . . | 4¼ x 6¾ | \$ 8.00 |

1 IN 4 NOW 1 IN 3

Ten years ago, only one in four cancer patients was being saved. Today, you, doctor, can expect to save one in three — thanks to your own leadership, a more aware public, improved techniques of diagnosis and treatment. We expect this progress to continue to the point where half of those stricken by cancer will be saved. As yet, science does not have the know-how to save the other half.

That knowledge will come when the riddle of cancer is solved in the research laboratories. To support this vital work, and to carry on its education and service programs, the American Cancer Society seeks \$30,000,000 this Spring. We are again appealing to the public to “fight cancer with a checkup and a check.”

The check is insurance for tomorrow. The insurance for today is largely in your hands, doctor. Fighting cancer with a checkup is our *immediate* hope for saving lives.

AMERICAN CANCER SOCIETY



PROTECT YOURSELF AS WELL AS THE PUBLIC

THE NATIONAL Foundation for Infantile Paralysis urges all persons, at least up to 40 years of age, to take the shots. Over 25 per cent of the polio cases in 1955 were among older people and seven out of every ten respirator cases today are 20 years of age or over.

“Polio cases in the future, though fewer in number, may be concentrated in the upper

age group and may be of even more serious consequence than the general level of the past,” Dr. Thomas Rivers, Medical Director of the National Foundation, said. “This situation will become more obvious unless the current reluctance of young adults to be vaccinated is overcome.”

Members of every profession related to medicine strongly urge their contemporaries to take the vaccine — properly spaced to effect maximum protection.

“It requires nearly eight months to complete

the three shots if they are taken properly," said Dr. George E. Armstrong, Director of the Medical Center and Vice President for Medical Affairs of New York University, "and it is a lot cheaper than chancing a lifetime with a disability."

Performance of the Salk vaccine up to now suggests a potential effectiveness among persons who have received all three shots, properly spaced, of about 90%. With only one shot, one cannot be sure that one is safe or that the immunization will last after the first; a second shot increases one's chance of being among the immunized. The third shot, given seven months after the second, further increases one's chance of being safe and it prolongs the term of safety, perhaps for years.

During the 1956 vaccine manufacturers brought supply up to meet demand. The 100,000,000th cubic centimeter of Salk vaccine was released by the U. S. Public Health Service in Washington in mid-September. There are no more priorities on use of commercial vaccine. It is available for all who want it.

PRACTICE SAFETY WITH PESTICIDES

By J. N. Roney

Extension Entomologist

University of Arizona

Agricultural Extension Service

PESTICIDES for control of insects and other pests of the home sometimes cause trouble by people not reading the label or not storing the materials correctly.

Manufacturers of pesticides and agriculture experimental researchers spend millions of dollars on investigations to properly prepare the correct data for the labels. The recommended dilution and timing of the application of the pesticide is a matter that requires many hours of specific study. This information on the label then may save a life if the user will read it.

Industry through the National Agricultural Chemicals Association has come up with recommendations that are very simple and every householder should keep these in mind.

1. Always read the label noting the specific warnings and cautions on all pesticides before they are used each time.

2. It is absolutely necessary that each pesti-

cide should be stored out of the reach of children, pets and irresponsible persons.

3. Always keep the pesticide material in the original containers.

4. Never give a neighbor or anyone a portion of a pesticide unless it is properly labeled.

5. Always store the pesticide in a safe, separate room, cabinet or closet or on a high shelf and where it is not exposed to excessive sun, heat or cold.

6. Never store pesticide where food or feed stuffs are stored or handled.

7. When using on vegetable plants endeavor to apply correct amount. Never leave a heavy residue on plants you may eat. If you do, be sure to wash thoroughly; follow directions on label.

8. Always wash hands and face after using a spray or dust material.

9. It is not wise to smoke while spraying or dusting.

10. Never spill pesticide on the skin or clothing.

11. If you do spill pesticide on skin wash off at once with soap and water.

12. Never inhale dusts or sprays.

13. When using most pesticides, especially phosphates, change clothes after using and do not wear again until they are washed.

14. When using pesticides around pets or livestock quarters cover food and water containers.

15. If fish ponds are around, be careful not to let the pesticide drift over the water.

16. In cases where weed killers like 2, 4-D and 2, 4, 5-T, are used, use separate equipment for these materials. Never use a pesticide in a container where any of the above materials have been used.

17. Whenever pesticide containers become empty be sure to dispose of them so they are not a hazard to humans, animals, or valuable plants.

18. In case of accidental poisoning or illness after using a pesticide, call a physician or get the patient to a hospital at once. Many insecticide companies furnish explicit directions for antidotes. If you use any of the phosphates, it is wise to get these precautions. Malathion is the only phosphate pesticide that does not require very careful precautions when using.

Pesticides are very useful for control of the household pests as well as the control of in-

sects on the plants around the home. Some pesticides are very poisonous to warm blooded animals. Tests have been made on how much to use and how to use. This information may be secured from the County Agricultural Agent in the form of bulletins or circulars for the asking. There is no charge. Many times the manufacturer issues recommendations. Sometimes these are written for the entire United States, therefore, you should get local recommendations from your County Agricultural Agent. There is one in each County in Arizona. He may be listed under the Agricultural Extension Service of the University of Arizona or just the County Agricultural Agent of your county.

BLUE SHIELD ACTS TO MEET NEW CHALLENGES

TEN YEARS ago 45 struggling local Blue Shield Plans had a combined enrollment of less than 2 million people. Today, 73 Blue Shield Plans cover some 38 million; and if their present rate of growth is maintained, these Plans will pass the 40 million mark in enrollment during 1957.

Several factors have conspired in recent years to alter and complicate the basic problems of Blue Shield enrollment: For one thing, most of the windfall apples have fallen off the tree, and enrollment men are having to climb ever higher in the tree to fill their baskets. Most local "blue chip" industrial groups have long since been enrolled by Blue Shield or some other agency, and the remaining local prospects are predominantly small groups, the self employed and rural dwellers.

Another vital new factor has been introduced by the tremendous growth of new industrial giants resulting from corporate mergers, and the concomitant tendency of labor unions to negotiate welfare benefits on a national scale. These big corporations and unions are demanding nation-wide hospital and medical care programs, offering at least the same scope of benefits for their workers in all parts of the country.

Blue Shield is an association of strictly autonomous local Plans, having similar purposes, but offering a considerable variety of specific benefits. The Constitution of Blue Shield Medical Plans recognizes that "state and local medical care plans should be autonomous in their opera-

tions so that the needs, facilities, resources and practices of their respective areas can be given due consideration, but that the health, and welfare of the public is advanced by the coordination . . . of methods, coverages, operations and actuarial data."

The Plans have sought, by voluntary agreement, to coordinate their efforts and to develop a basic program which each local Plan may offer the members of inter-Plan groups within their local Plan areas.

Without sacrificing an iota of local independence, more than three-fourths of the Plans have recently reached agreement on a standard scope of Blue Shield benefits, all or any of which each Plan will make available to any group of subscribers desiring this pattern of benefits. Nearly all the other Plans have promised to "go along" in the near future.

While this degree of coordination of benefits (in terms of covered services) has been found necessary to meet Blue Shield's enrollment challenge, each Plan will still make payments to physicians according to its locally negotiated schedules, and will calculate its own subscription rates.

This significant achievement of Blue Shield shows its ability to meet new conditions and proves the capacity of medicine's voluntary prepayment movement to solve whatever problems it may encounter.

THE ARIZONA MEDICAL ASSOCIATION, INC.

826 Security Building
Phoenix, Arizona

LOCATION OPPORTUNITIES

ASHFORK — Pop. 700 — North centrally located — Railroad center — Contact the Women's Club, Ashfork, Arizona.

BENSON — Excellent opportunity for GP — This David-Benson trade area has about 5,000 population with only one doctor available. Contact Mrs. Thomas Allen, Secretary, Benson Business Association, Benson, Arizona.

CAMP-VERDE — Located in the heart of a large farming and ranching area on the Verde River. Approximately 100 miles north of Phoenix. Badly in need of a medical doctor. Contact Ivy N. Moser, R. N., Camp Verde, Arizona.

DAVIS-MONTHAN AIR FORCE BASE — Located on outskirts of Tucson — In need of

a General Medical and Surgical officer part time, \$7,465.00 per year. Application should be made to the Civilian Personnel Office at Davis-Monthan.

DOUGLAS — Pop. 16,000 — On the Mexican border in the southeast section of Arizona. Opportunity for associate or independent practice in OALR with doctor who is doing only ophthalmology. Good opportunity here in the field of otorhino-laryngology. Contact James S. Walsh, M.D., 631 Ninth Street, Douglas, Arizona.

FLAGSTAFF — Pop. 17,000 — Largest city in the north central Arizona trading area. This community needs the following: one radiologist, one internist, one pediatrician and one or more general practitioners. A general surgeon could also do well since there is only one here. Contact Morris M. Zack, M.D., 411 Birch Street, Flagstaff, Arizona.

GILA BEND — Pop. 2,500 — 80 miles west of Phoenix — Nearest town to the Painted Rock Dam Project — Good opportunity for general practitioner. Cattle, cotton and general farming. Office and equipment available. \$150 monthly income from Board of Supervisors. Contact Mrs. J. F. Allison, Box 485, Gila Bend, Arizona.

LAS CRUCES, NEW MEXICO — In South Central part of State and not too distant from El Paso, Texas. Population is approximately 22,000, boasts State College and White Sands proving grounds. General Hospital, 85 beds, fully accredited and staffed by fourteen (14) doctors. Need Urologist, Anesthesiologist and Obstetrician-Gynecologist. For full details write: A. M. Babey, M.D., President of the Staff, 250 West Court Street, Las Cruces, New Mexico.

MORENCI — Mining community located near New Mexico-Arizona border. Has vacancy at hospital for GP. Contact Carl H. Gans, M.D., Morenci Hospital, Morenci, Arizona.

PAYSON — Pop. 1,800 — Have completed and equipped a new clinic. Are badly in need of a medical doctor and the closest medical facilities are 80 miles away. For further information contact Mr. Walter Surret, President, Payson Clinic, Payson, Arizona.

TUCSON — The V.A. Hospital has two vacancies at the present time — one if for an internist on the Medical Service and the other is for either a general or thoracic surgeon on the Surgical Service. State license is necessary, but not necessarily an Arizona license.

Contact S. Netzer, M.D., Director, Professional Service, V. A. Hospital, Tucson, Arizona.

TUCSON — Opening for a board certified or board eligible Orthopedist to form and head an Orthopedic Department in the Tucson Clinic. Must have had good training in pediatric orthopedics as well as acute trauma and reconstructive work. Are looking for a younger man; however, are willing to consider any well-trained physician regardless of age. If interested, contact D. J. Heim, M.D., The Tucson Clinic, 116 North Tucson Boulevard, Tucson, Arizona.

YOUNGSTOWN — Pop. 130 — Located 16 miles from Phoenix, 4 miles from Peoria, 1½ miles from El Mirage, 1 mile from Surprise, each a potential field of practice. Most residents are 60 years of age or older and are in need of medical care. Office space is currently provided at no rental. A medical center is being planned. Interested doctors may contact Mr. Sid Lambert, Box 61, Marionette, Arizona.

YUMA — Pop. 15,000 — Situated in the Southwest corner of the State on the Colorado River — In need of a country physician. This is an ideal set-up for a retired or semi-retired doctor. The doctor could devote all of his time to the job or have a private practice in addition. If interested, call Mr. Robert Odom, collect, at SUnset 3-7843 as soon as possible.

FOR INFORMATION ON OPPORTUNITIES IN THE FIELD OF INDUSTRIAL MEDICINE, CONTACT: Harold J. Mills, M.D., Phelps Dodge Hospital, Ajo, Arizona; Carl H. Gans, M.D., Phelps Dodge Hospital, Morenci, Arizona; Ira E. Harris, M.D., Miami Inspiration Hospital, Miami, Arizona; Charles B. Huestis, M.D., Box 928, Hayden, Arizona; Elvie B. Jolley, M.D., Copper Queen Hospital, Bisbee, Arizona; H. W. Finke, M.D., Magma Copper Company Hospital, Superior, Arizona; and John Edmonds, M.D., Kennicott Copper Corporation Hospital, Ray, Arizona.

MEDICAL EDUCATION WEEK **April 21-27, 1957**

THE IMPRESSIVE story of the accomplishments of U. S. medical schools will be told to the nation during the second annual observance of Medical Education Week, April 21-27.

The purpose of the observance is to focus the attention of the American people on the national importance and indispensability of

medical education. A well-organized program of public information will bring about greater friendship and support for the medical schools by creating a better understanding of their aims, problems, achievements, and public services.

President Eisenhower, in his personal endorsement of this observance, said, "While the benefits of health and medical education are daily with us, it is fitting to devote a special week to the consideration of the wider training of physicians. Each American has a personal stake in our country's medical schools. The schools which train the physicians required by our growing population are a vital resource for the health of our people and the strength of the Nation."

Specific aims of Medical Education Week, if pursued effectively, will demand the participation of a large portion of our members. These are the goals:

1. To portray the key role that medical education plays in the promotion and maintenance of the nation's health and security, and make the public aware that the nation's 82 medical schools are the foundation of our entire health and medical structure.

2. To explain how the medical schools are striving to meet the demand for larger numbers of physicians and, at the same time, to maintain the high standards of training that have come to characterize American medical education.

3. To call attention to the steady progress in the medical sciences, showing what this means in terms of longer life, better health and greater freedom from disease and disability.

4. To point out the wide range of activities — teaching, research, service and leadership — carried on by the modern medical school in addition to its job of training new doctors.

5. To make clear the extent and nature of the new challenges to the profession, some growing out of our constantly expanding fund of medical knowledge and some resulting from the mounting complexity of our civilization.

6. To point out some of the steps being taken constantly to push back the horizons of the medical sciences and to realize the full potential of the nation's health resources.

While medical societies and medical schools throughout the country build community programs around these objectives, the national

sponsors — the AMA and the Woman's Auxiliary, the Association of American Medical Colleges, the Student AMA, the American Medical Education Foundation, and the National Fund for Medical Education — are enlisting the help of newspaper syndicates, radio and television networks, popular and professional publications, civic groups, industry, and commerce in a broad program of national publicity and promotion.

CARDIAC MONITOR

By Seymour Fisher, M.D.

THE RISK of sudden death at surgery has been reduced through the development of a new instrument by scientists and doctors at the Hines, Ill., Veterans Administration Hospital. Called a "Cardiac Monitor," the transistorized device permits continuous and instantaneous monitoring of the heartbeat during surgery and for use during non-surgical emergencies. The meter warns the doctor that the heart is not working properly and that remedial steps are indicated.

Standard electrocardiograph electrodes are strapped on the forearms of the patient. These pick up the cardiac impulse and feed it into the machine. This impulse is amplified by the transistor circuit and indicated on a meter.

Controls consist of amplitude and fidelity knobs, a phone jack is provided should it be desirable to feed the heartbeat into a recording device or headphones.

The use of the transistors and small batteries makes the unit portable. It is housed in a 6 x 5 x 4 inch aluminum case that is equipped with a carrying handle. The total weight is 3 pounds. The power supply consists of four standard-sized flashlight batteries.

The monitor has been successfully tested at Hines. It has provided an immediate diagnosis of irregular heart action and may anticipate stoppage of the heart. It has even been able to provide monitoring of the heart rate during profound shock when the patient was clinically pulseless.

The cardiac monitor may be especially useful during cases of extreme shock as it provides accurate information that the heart is still functioning even though blood pressure and pulse may not be detectable. This should prevent unnecessary opening of the chest for cardiac massage. Instead, the doctor can initiate other

measures to return the blood pressure and circulation to normal without loss of valuable time in trying to assure the correct diagnosis.

Nurses, technicians, and even non-medical rescue personnel can operate the monitor readily because of its simple design and mechanism.

While the monitor was developed to give an instant picture of the heartbeat as an aid to the surgeons and anesthesiologists in a large general hospital, it might be of even greater value in the small hospital or for use during dental anesthesia, when a qualified anesthesiologist is less likely to be available.

The device was designed and developed on the radioisotope, medical and surgical services of the Hines, Ill., VA Hospital by Theodore Fields, M.S., Dr. Ervin Kaplan, Dr. Bernard Abrams, Dr. Robert Simpson, Dr. Archer Gordon, and Joseph Kenski, E.T.

FREE CARDIAC SURGERY PROGRAM

NATIONAL Jewish Hospital at Denver is expanding its cardio-vascular program. It will consider applications for admission in behalf of patients suffering from cardio-vascular defects amenable to surgical intervention, including mitral and aortic stenosis, congenital cardiac anomalies, etc. Definitive diagnosis is not necessary prior to admission, inasmuch as the hospital has a completely equipped cardio-pulmonary physiology laboratory for this purpose. Patients are accepted without respect to race, religion, or national origin, and without charge. Only those unable to pay for private care are eligible. Periodic reports are made routinely to the referring physician and the patient is directed to report to him after discharge. Inquiries should be sent to Medical Director, National Jewish Hospital, Denver 6, Colorado.

American Cancer Society Fellowships In Biometry and Epidemiology 1957-58

PREDOCTORAL fellowships: Applicants must have the B.A. or B.S. degree, and are expected to enter the Graduate School as candidates for the Ph.D. degree. They will receive training in one or more fields of biology as well as statistics. Fellowships are for three years; stipends, \$2,000 per year. Additional funds may be available depending on need.

Postdoctoral fellowships: Applicants must

have either an M.D., a Ph.D., or an Sc.D. These fellowships are for younger investigators, or for more mature men and women who want to extend their fields of competence. In addition to carrying out their own research, fellows will be given training in biometry, biostatistics, and other selected subjects. Fellowships are for one year, but may be renewed for two more. Stipends begin at \$4,000, and increase, depending on individual circumstances.

For further information, write to Professor E. Cuyler Hammond, Director of Graduate Studies in Biometry, 30 Hillhouse Avenue, Yale University, New Haven, Connecticut. Application blanks for predoctoral fellowships may be obtained from the Director of Admissions, Graduate School, Yale University, New Haven, Connecticut. All applications for both types of fellowships should be submitted as early as possible in 1957.

FELLOWSHIPS IN ALLERGY

THE BOARD OF TRUSTEES OF THE AMERICAN FOUNDATION FOR ALLERGIC DISEASES announces the availability of three Fellowships in Research and Clinical Allergy for a period of two years each, carrying a stipend of \$4,500 for the first year, \$4,750 for the second, and a total of \$750 for laboratory and travel expenses during the two-year period. The funds for these fellowships have been made available by Mr. John D. Rockefeller, Jr., in a grant to the Foundation.

It is the hope of the Foundation that the recipients will be stimulated to enter the field of research allergy and will be equipped to teach others. Unlike the usual procedure, the Foundation has established single fellowships with three investigators eminently qualified to teach the principles and techniques of scientific method in this field and in institutions where adequate clinical facilities exist. Applicants should apply directly to one of the following investigators who will make the final selection:

Dr. Frederick G. Germuth, Jr.,
Associate Professor of Pathology,
The Johns Hopkins University Medical School,
Baltimore 5, Maryland.

or

Dr. Colin M. MacLeod,
Professor of Research Medicine,
University of Pennsylvania,

820 Maloney Clinic,
36th and Spruce Streets,
Philadelphia 4, Pennsylvania.

or

Dr. Herman N. Eisen,
Professor of Medicine, (Dermatology)
Washington University School of Medicine,
Saint Louis, Missouri.

Candidates must be graduates of approved medical schools and must have completed the graduate training required as a preliminary to certification by the Boards of Internal Medicine or Pediatrics; they are to divide their time between research and clinical training, and in the second year 10 or 15 per cent of a candidate's time might be devoted to teaching.

The respective Institutions are undertaking to have this training credited toward the Sub-specialty in Allergy by the Board of Internal Medicine and the Board of Pediatrics.

Applications should be received by May 10, 1957.

Notification of the action taken on these applications will be sent to the candidate by June 10th of this year.

**MEETING OF RADIOLOGICAL
SOCIETY OF NORTH AMERICA
Chicago, December 2 to 7, 1956**

By R. Lee Foster, M.D.

**PANEL DISCUSSION OF FUNDAMENTAL
PROBLEMS IN RADIATION THERAPY**

This panel was presided over by Dr. J. W. J. Carpenter as moderator and members of the panel were Drs. Clifford L. Ash of Toronto, Ontario, Ralph Caulk of Washington, D. C., Vincent P. Collins of Houston, Texas, and Morton M. Kligerman of New York City. Eight radiation problems were presented to the panelists for discussion, some of which I will mention with some of the points which were brought out.

1. WILM'S TUMOR. This discussion precipitated the old controversy regarding surgery and irradiation or a combination. Controversy still exists, but there is at least some tendency to agreement that in bulky lesions that pre-operative irradiation to reduce the bulk and allow for more meticulous surgery was in order and preferable. Following surgery postoperative irradiation to the tumor bed pushing this to tolerance to kill dissemination is recommended.

2. BENIGN SQUAMOUS PAPILLOMAS OF THE BRONCHI. This relatively rare condition was brought before the panel with report of a case which developed after four years industrial exposure to noxious fumes. There was a widespread dissemination of these lesions throughout the bronchial tree and on both sides interfering seriously with pulmonary aeration. It was conceded that surgery had no place in the treatment of this wide dissemination, and the consensus was that x-ray should be used with rather high dosage, probably up to 3000 or 4000 roentgens in four weeks.

3. CARCINOMA OF THE BREAST. Two different problems along this line were discussed represented by two cases. There was much disagreement, both as to the relative merits of surgery and radiation and to the type of surgery or radiation used in either case. No ironclad conclusions were reached. It was brought out that the value of oophorectomy in these cases is not firmly established, nor can it be definitely denied by the evidence now at hand. If radiation is given, the ovaries should receive a tissue dose of 1800 roentgens in five days. One case developed a myxedema after irradiation which it is assumed is coincidental since no one else had experienced such a complication after irradiation. At any rate thyroid therapy caused a regression of numerous metastases which, however, recurred at a later date. Steroid therapy was discussed and should probably be deferred until definitely needed for its palliative effect.

4. HEMANGIOMAS. These are treated in a variety of ways. If radiation is used very low doses at infrequent intervals are recommended. There were several vociferous opinions that these should not be treated at all as 95 to 96 per cent of them are said to regress in five years even without treatment. This opinion was upheld in a class on roentgen therapy in childhood conducted by Dr. M. H. Wittenborg of Boston, Mass. who maintained that treatment should be avoided if at all possible, and stated that any type of trauma, whether it be extreme heat, extreme cold, bruising, pricking or anything else would cause these lesions to regress sooner.

5. CARCINOMA OF THE TONGUE. Discussion of this condition was highlighted by the consideration of prophylactic neck dissection which proved to be quite controversial but with

the majority of the discussants being against a purely prophylactic neck dissection. The statement was made that, "it removes the nodes but not the disease."

In a film interpretation session presided over by Dr. Merrill C. Sosman of Boston, the following men took part. Drs. Lawrence L. Robbins, of Boston, Mass., John A. Evans, New York; Cesare Gianturco of Urbana, Illinois; Arthur Present of Tucson, Arizona; and David M. Gould of Little Rock, Arkansas. Two or three observations brought out in this session deserve mentioning. It was pointed out in trying to diagnose a lipoid pneumonia that one should collect the first sputum of the morning so as to avoid contamination with cream or other fatty foods, and do a Sudan 3 stain. If intracellular fat is seen, the diagnosis is made.

In discrete pulmonary lesions of the so-called "coin" type, temporizing is discouraged and exploratory surgery encouraged. Statement was made that, "A period of observation is the period of lost opportunity."

A panel discussion of the practical clinical use of radio-isotopes was presided over by Dr. Hymer L. Friedell of Cleveland, Ohio with the panelists being Drs. Rulon Rawson, Kenneth E. Corrigan, John P. Storaasli, from Portsmouth, Rhode Island; Robert Robbins, Philadelphia, Penn.; Vincent Collins, Houston, Texas; and Dwight E. Clark of Chicago, Illinois. A discussion of the diagnosis and treatment of hyperthyroidism by Iodine 131 was discussed at length. It was conceded that the BMB determination is still a very useful procedure, but must be carefully done. Radioactive iodine uptake studies are helpful but are also subject to error. For example, a 10 per cent natural error in uptake studies is expected, and various conditions exclusive of hyperthyroidism may affect the uptake. Patients with edema may show a very low uptake, even enough to suggest myxedema, even though the patient may have hyperthyroidism. Protein bound iodine content of the blood is good, but is also subject to many pitfalls. High iodine intake either through food or medication interferes with the test. A myelogram may invalidate blood iodine studies on that particular patient forever. Anti-thyroid medication also invalidates the test.

In treatment it was generally concluded that patients below forty should be treated by surgery and not by radioactive iodine for two

outstanding reasons. 1. Because the carcinogenic potential of radioactive iodine has not yet been determined and, 2. it is desirable to avoid any excessive dose to the gonads during the reproductive period. In treatment with radioactive iodine about 15 per cent of the patients develop hypothyroidism.

In treating carcinoma of the thyroid and carcinomatous metastases, a thyroid blocking agent may be used for sometime previously to affect an ultimate increase uptake of the radioactive iodine.

In solitary thyroid nodules, which are demonstrated as non-functioning nodules, by the lack of iodine uptake, it is imperative that they be surgically removed. A complete lobectomy should be done, which should be adequate in case it is carcinomatous and no metastases are identified.

Ablation of the thyroid in intractable cases of angina pectoris was discussed. This was considered as proper and good treatment by the majority of the panelists who remarked that this is the one and only use of radioactive isotopes in medicine where there is no competing modality which might be used as an alternative. One discussant felt the patient should be treated with anti-thyroid therapy for four to six weeks previous to the ablation theoretically to wash out the thyroid hormone and to prevent its sudden release into the blood with destruction of the gland. Dr. Rawson, however, says the increased PBI found after destruction of the gland is all due to thyroglobulin and that this does not produce a thyrotoxicosis. He considered the anti-thyroid therapy as superfluous.

POLYCYTHEMIA VERA. Treatment here can be either radioactive phosphorus or whole body irradiation. Dr. Collins prefers whole body irradiation because of better dosage control. He gives weekly treatments of 25 roentgens at distances of 100 to 300 cm. to a total of 100 roentgens. Three other discussants prefer radioactive phosphorus given in a dosage of 5 millicuries for the average man with a range varying according to weight of a minimum of 3 to a maximum of 10 millicuries. All agree that these should probably be preceded by phlebotomy to bring down the hematocrit to something around normal and to minimize the imminent danger of thromboses. Anticoagulants might be considered but the combined experience of the

panel with this was small.

THERAPY OF PITUITARY ADENOMATA. Eosinophilic type only was discussed by Dr. Donn G. Mosser of Minneapolis, Minnesota. Forty cases at the Univ. of Minnesota received dosages of 1800 to 3000 r in three to four weeks. Seventy per cent were improved, 17½ per cent unchanged; 7½ per cent became worse, and 5 per cent were lost to follow-up. Impression obtained by the analysis of this case series was that lower voltages are just as effective as super voltage in therapy of these lesions, and relatively small doses have been effective. Surgery is used only when x-ray fails; and cystic tumors tend to be very radiation resistant and do not respond to the x-ray.

RADIATION TO LENS INCIDENT TO TREATMENT OF TUMORS OF THE EYE AND ADJACENT STRUCTURES. Dr. George E. Merriam, Jr. of New York City indicated that in dosages of 400 roentgens to the lens very few patients developed cataracts. With dosages of 700 roentgens to the lens 50 per cent of the patients developed cataracts, and with dosages of 1100 roentgens to the lens, all patients developed cataracts. Measurements of the dosages received by the lens were made in treatment of various conditions such as carcinoma of the antrum, carcinoma of the eyelids and carcinoma of the nasopharynx. The necessity of beam direction to avoid the lens and adequate shielding wherever possible was stressed.

USE OF ELECTRON BEAMS IN INDUSTRIAL PROCESSES. This very interesting discussion by E. Dale Trout who is a Doctor of Science, Milwaukee, Wisconsin, pointed out that food sterilization required beam powers far beyond that used in ordinary medical procedures, and that this rendered sterilization impractical now in large quantities of food-stuffs. He estimated, however, that within ten years dairy products would be sterilized by this method, and within five years beer and certain food products would be sterilized by this method, and within one year potatoes, small surgical supplies, and other small items would be so sterilized. In fact, potatoes are now being treated to prevent sprouting. A small black ampule of eye ointment is being marketed sterilized, and packaged polyethylene tubing for medical use are being sterilized by this method. The army is pursuing experimental studies on food sterilization and is now build-

ing a 7½ million dollar plant near Stockton, California, as a pilot plant in its food sterilization program.

MAXIMAL PERMISSIBLE IRRADIATION DOSE. Considerable interest and controversy in this subject has been stirred up by the recent newspaper publicity given to the report of the National Academy of Science as to the unfavorable effects of radiation. This has apparently ignored the efforts of the radiological profession along this line for the past 50 years. Radiologists are and always have been conscious of the hazards of over-exposure and have been constantly on guard to prevent it. While the possibility of increased exposure to the general population from sources other than x-ray may make it necessary to give more attention to the exposure of the total population, this will not seriously affect the exposure from medical procedures, and the advantages of the information obtained and the benefits obtained by x-ray treatment will far outweigh any hazards of over-exposure in this group of people. Some revision of maximum permissible exposures may need to be made for the protection of the general population which heretofore had no possible source of over-exposure, and needed no restrictions. More will be heard of this later.

RADIOTHERAPY OF BRONCHOGENIC CARCINOMA. James E. Lofstrom, M.D., of Detroit, Michigan discussed treatment of bronchogenic carcinoma by irradiation, contrasting results obtained with conventional 250 kilovolt therapy, and super voltage or Cobalt 60 therapy. In spite of careful treatment planning and dosage delivery the super voltage and Cobalt 60 therapy did not give any appreciable increase in favorable results over the conventional 250 kilovolt therapy. Results in either case were very poor with only nine patients out of one hundred patients treated are now living, with palliative effects being obtained only in 41 per cent of the patients and with the average survival after treatment being only five months. The outlook in this particular condition is indeed grim at the present moment.

SMALL PNEUMOENCEPHALOGRAMS AS A SCREENING PROCEDURE IN CONVULSIVE DISORDERS. Lewis E. Etter of Warrendale, Pennsylvania gave their experience with examination of 200 veterans in the 21 to 40 year age groups by this method. Twenty cc.

of air was injected into the spinal canal after removal of 20 cc. of spinal fluid, and ten routine x-ray exposures made. Radiation exposure was kept down by using a high kilovoltage technic, 120 kilovolts with a filtration of 3 mm. of aluminum and fast detail screens. The procedure produced much less discomfort and side effects than the conventional procedure in which 100 cc. or more of air was injected and detailed comparison of their diagnostic accuracy by this method revealed a correlation within a very small percentage of positive diagnoses and of diagnostic errors. Dr. Etter claims it is not a complicated procedure, is relatively benign, and is within the capabilities of any radiologist for its performance.

INTRACRANIAL CYTOMEGALIC INCLUSION DISEASE. This rather rare disease was discussed by Charles R. Perryman, M.D. of Pittsburgh, Penn. It is a virus disease probably an encephalomyelitis, and is found in very young infants and is believed to affect many of these during their intra-uterine existence. Virus producing this disease may be found in normal salivary glands. It may be confused with conditions concerned with RH incompatibilities and is often confused with toxoplasmosis, since one of the evidences of this disease is calcification within ependymal lining of the ventricular system of the brain, and this can frequently be seen in routine radiographs of the skull. When any intracranial calcifications are seen in the newborn infant or in a child under two years of age, this disease should be added to the differential diagnosis. By way of discussion and speculation it is suggested that routine radiographs of the skulls should be made of all stillborn babies in addition to the regular autopsy, if permitted. An additional aid to diagnosis is the finding of basophilic inclusion bodies in the cells of body tissues and in large cells which may be found in the centrifuged sediment of urine.

MENINGIOMAS. Meningiomas of the tuberculum sellae were discussed by Dr. Philip J. Hodes of Philadelphia, Penn., and radiographic evidences of their presence were demonstrated by lantern slides. The ossification or hyperostosis or both may occur in the region of the tuberculum sellae. Pneumoencephalography is useful in revealing the tumor mass many times and cerebral angiography is also of considerable help. Meningiomas of the posterior fossa were

discussed by Theodore A. Tristan, M.D. of Philadelphia, Penn. and x-ray evidences of their presence were pointed out. It is important that these be recognized and diagnosed early as surgery may then be curative.

THE OBSTRUCTED URETEROPELVIC JUNCTION. Robert Linch, Jr., M.D. of Louisville, Ky., and his associates studied a number of cases which showed radiographic narrowing in the ureteropelvic junction area or other filling defects in this area, and with varying degrees of pyelectasis above. By removing portions of the ureteropelvic junction surgically and sectioning these longitudinally for staining and microscopic study, he found that these cases almost without exception had congenital valve-like structures in the area which closed when subjected to hydraulic pressure from the direction of the kidney pelvis, but which opened to allow retrograde passage of fluid or the ureteral catheter of the urologist. These valves were so delicate in their structure that even gross examination and calibration of this area when the kidney pelvis was opened surgically was misleading, and the valves could not be detected by this method. Their obstructive action could be demonstrated by puncturing the kidney pelvis with a needle and injecting saline into the kidney pelvis exerting a hydraulic pressure in the downward direction in the ureter which would in many cases close these congenital valves and cause distention of the renal pelvis. Surgical correction of this type of intermittent obstruction resulted in improvement or return to normal in a number of cases of pyelectasia.

INTRAVENOUS CHOLANGIOGRAPHIC DIAGNOSIS OF PARTIAL BILIARY DUCT OBSTRUCTION. Dr. Robert E. Wise of Boston, Mass. presented a study of this condition including their experience with over 750 injections of Cholegrafin. They found a number of patients who have had cholecystectomies or who had pathological cholecystectomy and who still complained of gallbladder symptoms, who presented evidence by this diagnostic procedure of partial obstruction of the common duct. This was produced either by calculi, polyp, fibrosis of the sphincter of Oddi or neoplasm in the lower portion of the common duct or at the sphincter. The majority of the cases were caused by fibrosis of the sphincter of Oddi and were treated by transduodenal sphincterotomy.

In the diagnosis of this condition by the

Cholografin technic the time density relationship was found to be important. In unobstructed cases, the best visualization of the common duct was obtained at about forty-five minutes after injection of the Cholografin and dropped off rapidly following that time. In obstructed cases, however, the build-up of density in the common duct was gradual up to about 90 minutes after injection where a maximum density was obtained and this density instead of falling off or diminishing thereafter remained at about the same density for sometimes several hours or more. This time density relationship should be kept in mind in the interpretation of intravenous cholangiograms.

INTRAVENOUS PYLEOGRAMS FOR INFANTS AND CHILDREN. Dr. Raymond R. Lanier of Denver, Colorado discussed this subject and emphasized that children were usually living with a very easily upset acid-base balance and nutritional imbalance, and that often any upset to the gastrointestinal tract or to the water balance of the body may upset their physiology so seriously as to have a fatal outcome. Consequently, he recommends that no catharsis, enemas, fasting, or dehydration procedures be used in preparing children for intravenous pyelograms. There is practically no contraindication to intravenous pyelograms in children; not even high N.P.N.'s and infections are excepted. Also rarely do children ever exhibit any iodide sensitivities so that the dangers of injection of contrast medium are less than for adults.

Tubular reabsorption for concentration of urine is very poor and indeed non-existent in young children, and for this reason large doses of concentrated intravenous dye need to be used. Filming is begun early, usually as early as three minutes after injection of the contrast medium. Since gas in the intestinal tract is a problem, any means of distending the stomach with air is used to push down the intestinal gas and to uncover the kidneys. If the child does not swallow enough air with ordinary feeding, carbonated drinks are given.

Reactions to the intravenous injection of the dye are combatted first with the insertion of an airway, and this should be in every emergency kit. Oxygen then is given, and if there is vasomotor collapse, Neo-Synephrine or similar medication. Intravenous barbitrates should be kept handy for convulsive manifestations and

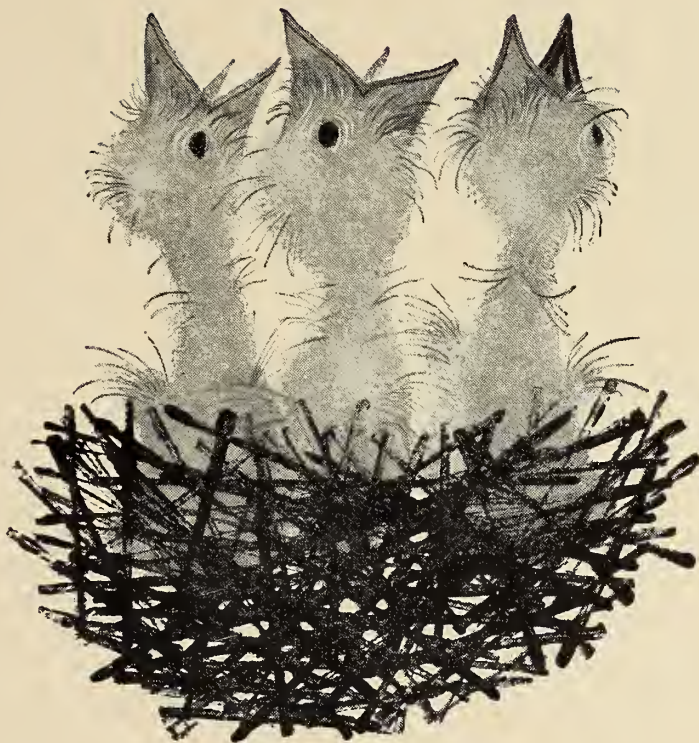
for genuine allergic reactions, one of the anti-histamines as for example Benadryl should be used intravenously if necessary.

In this examination the lower urinary tract should not be neglected and voiding films are very often quite useful.

MANAGEMENT OF THE PATIENT WITH ADVANCED CANCER. Various aspects of the management of the patient with advanced cancer were discussed by various panel members in a symposium of this subject. Considerable emphasis was given to hormone therapy with as an example in postmenopausal women with cancers of the breast and bony metastases, treatment with estrogens frequently cause remission of the disease with recalcification of the metastases sometimes for considerable periods of time. Androgens are used perhaps as a second choice, and hypophysectomy has been found also very effective in causing regression of the metastases for considerable periods of time, and palliating pain which the patients have. In premenopausal women with metastases from cancer of the breast, castration is recommended as the first step if this has not already been done. Surgery versus radiation castration was discussed with no conclusive evidence of clear cut superiority of one over the other. Androgens or cortisone were also found useful, and if the patient has responded well with one remission to castration it is almost certain that hypophysectomy will also be successful.

PULMONARY ALVEOLAR MICROLITHIASIS. One of the more interesting of the scientific exhibits was an exhibit of films together with case histories of several cases of this rare disease. This is a disease which causes chemical changes in the alveoli with calcification of the linings of the alveolar walls. These patients may live well into adulthood, but usually die of a pulmonary insufficiency. In the x-ray films these calcifications within the alveoli can be seen, and this disease must be considered when widespread pulmonary calcifications of fine texture are seen. This must be considered in the differential diagnosis from silicosis, lipiodol residue in the alveoli, ameloidosis, and the many other things which can cause similar shadows.

RAPID FILM PROCESSING. One of the most interesting of the commercial exhibits was an exhibit by the Eastman-Kodak Company demonstrating an entirely new method of film processing. The exposed films are fed into a



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| Thiamine mononitrate | 1.0 mg. |
| Riboflavin | 1.0 mg. |
| Niacinamide | 5 mg. |
| Pantothenic acid (Panthenol) | 1.5 mg. |
| Pyridoxine hydrochloride | 0.5 mg. |

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slot at one end of this developing machine, no film hangers being necessary. The films are carried through the machine by being transported between rollers, these rollers transmitting them through developing solution, stop bath and fixing solution; thereafter through wash water and then between drying rolls which squeeze all of the surface solution and water off from the films and subject them to a blast of warm air so that the films come out flat and dry at the opposite end. The whole cycle takes a few seconds less than six minutes. It is not expected that this apparatus will immediately replace all of the conventional developing tanks in the country, since the present selling price is somewhere around \$25,000.

ARTERIOGRAPHY. In a symposium on the technics, clinical aspects, values, and complications of this procedure, the extremely valuable aid given in the diagnosis of certain conditions was well demonstrated. The complications, however, were sufficiently formidable and serious to render, in this commentator's opinion, this a procedure to be used with extreme care and in highly selected cases. It should be used only in cases where the information cannot be obtained otherwise, and where the correct diagnosis obtainable by this method has a good possibility of making available to the patient, definitive therapy for his benefit. Fortunately these severe complications are reported as rare, the occurrence being well under one per cent. These serious complications include renal damage apparently produced by direct toxic effect of the injected contrast medium, central nervous system injury particularly injuries of the spinal cord, resulting in partial or total paralysis, massive hematoma around the puncture site with all the attendant dangers of pressure from the hematoma or exsanguination of the patient, extra-aortic extravasation of the contrast medium, as well as other.

COBALT 60 THERAPY. A symposium as to the relative value of Cobalt 60 therapy and conventional 250 kilovolt therapy had as its participants Drs. Isadore Lampe, of Ann Arbor, Michigan; T. A. Watson, Saskatchewan, Canada; Juan A. Del Regato, of Colorado Springs, Colorado; James W. J. Carpenter, of Chicago, Illinois; and Franz J. Buschke of Seattle, Washington. Although it was pointed out that Cobalt therapy or supervoltage therapy had the ad-

vantage of less bone absorption allowing a treatment of tumors past bone with deliverance of a better dosage, and also that there is some skin sparing action with delivering of dosage deeper beneath the skin, nevertheless it was not without its problems, such as for example the increased exit dose in this type of therapy and its disadvantage when actual bone tumors needed to be treated. It was pointed out that the sensitivity of tissues to irradiation is impartial to the quality of the irradiation and a dosage delivered to a specific tissue by whatever method is just as effective, so long as the amount of irradiation absorbed is the same. This is to say, of course, that the 250 kilovolt therapy is not outmoded by any means, and apparently will not be replaced by supervoltage and Cobalt therapy. In tumors of bone the lower voltage is more advantageous since more of the irradiation is absorbed within the bone.

CHEMOTHERAPEUTIC AGENTS USEFUL IN THE TREATMENT OF MALIGNANT DISEASE. Dr. Clyde O. Brindley of Bethesda, Maryland discussed at length the use of various chemotherapeutic agents including Amethopterin, 6 Mercaptopurine, 6 Chloropurine, 6 Thioguanine, Azoserine, Demecolcin, Urethane, Prednisone, Cortisone, Testosterone, Halotestin, Nitrogen Mustard and others. Experimental statistics were quoted at some length, but there are at least two obvious conclusions concerning the use of these drugs. One, practically all of these drugs have toxic effects of varying degrees, most of these being quite severe and discomforting to the patient. Two, although remissions in various diseases treated may be obtained, these remissions are usually of relatively short duration and there is no change in the eventual outcome of the disease.

Book Review

NEW DIRECTIONS IN PSYCHOANALYSIS edited by Melanie Klein, Paula Heimann, and Roger Money-Kyrle. 534 pages. (1955) Basic Books. \$7.50.

These 21 essays by an international group honor Melanie Klein and her pioneer research in Freudian theory. For the first time they present her viewpoints and research. The story of the origin and evolution of her "play technique" alone makes it worth while. Analytical physicians will find it both fascinating and practical.

Stacey's Medical Books, San Francisco

CANCER SEMINAR

DR. JAMES D. Barger, of Phoenix, chairman of the Arizona Division Professional Educational Committee, reported to the board of the Division that this year's Seminar was the most successful in the five years they have held it in Arizona. No doubt this was due to the fact that the speakers were particularly outstanding in the Cancer field, and that the sessions were well planned, and most informative to those present.

A cocktail party sponsored by the Rocky Mountain Pharmacal Company was well received by all M.D.s present.

The total attendance of doctors and interns was two hundred forty-three (243) which is exactly the same number that attended the year before. Total registration this year was three hundred sixty-three (363). There were thirty out of state doctors attending this year. Every county in the state was represented except Mohave.

For the first time the event was covered nationally by the United Press and Associated Press reporters who were in attendance; also the Science editor of our own National Society and the Modern Medical magazine were personally represented. These news releases have certainly brought national attention to Arizona as some of our speakers, (particularly Dr. John Z. Bowers, Dr. Joseph W. Gale, Dr. Eugene P. Pendergrass, Dr. Hans G. Schlumberger) and our office have been swamped with mail.

The speakers were: John Z. Bowers, M.D.; David C. Dahlin, M.D.; Dominic A. DeSanto, M.D.; Joseph W. Gale, M.D.; L. Henry Garland, M.D.; Alfred Gellhorn, M.D.; J. Vernon Luck, M.D.; Joe Vincent Meigs, M.D.; Eugene Pendergrass, M.D.; Hans G. Schlumberger, M.D.; and David A. Wood, M.D.

Moderators for this year's event were: Willard V. Ergenbright, M.D., Orthopedic Surgeon; Dermot W. Melick, M.D., Thoracic Surgeon; Preston T. Brown, M.D., Gynecologist; Lorel A. Stapley, Jr., M.D., Pathologist; Darwin W. Neubauer, M.D., General Surgeon; Frederick J. Lesemann, Jr., M.D., Surgeon; W. Albert Brewer, M.D., General Surgeon; Arthur J. Present, M.D., Radiologist.



Dr. Wood, President of the American Cancer Society, presents the Division Charter to Dr. Bregman, President of the Arizona Division. The Arizona Division is one of the 12 Divisions to receive an unqualified rating, of the 60 divisions of the American Cancer Society.

The Seminar Committee for this year was co-chaired by Dr. Edward H. Bregman, president of the Arizona Division, and Dr. James D. Barger; other members of the committee were Dr. W. R. Manning, Dr. Dermont W. Melick, Mrs. Robert E. May and James R. Bunker. The board voted to hold the sixth annual Seminar in Tucson. Dr. Bregman appointed Dr. Darwin Neubauer chairman of the executive committee, Arizona Division to chair this event next year.

EDITOR'S NOTE: The Cancer Seminar as conducted these past five years by Drs. Bregman and Barger under the auspices of the Arizona Division, American Cancer Society, has developed into an excellent and educational program. These men are to be commended upon the excellent faculty they have assembled each year.

AMA COUNCIL ON NATIONAL DEFENSE MEETS

A SPECIAL meeting of the Council on National Defense was held in Chicago on January 27th to consider a proposal by the Federal Civil Defense Administration for a plan of study and research to establish a program for the medical and health care of surviving non-

casualties, including the coincidental problem of public health and environmental sanitation that will be present in the event of enemy attack on this nation.

Dr. M. M. Van Sandt, Director, Medical Care Division, Health Office, FCDA, explained to the Council that prior planning assumptions, based upon less destructive weapons (A-bomb), focused attention to the development of plans for the management and care of large scale casualties. However, with the advent of increased weapon potentiality and the advanced methods of delivering nuclear bombs, it is essential that consideration be directed to the medical health requirements of the surviving non-casualty population. The extent of the problem is tremendous since large numbers of displaced persons will move into non-target areas, thereby overtaxing depleted medical and health facilities, supplies, and professional personnel. These conditions could last up to one year.

The Council has submitted a report to the AMA Board of Trustees on this subject which will be considered at its next meeting.

Future Meetings

WORLD CONGRESS OF GASTROENTEROLOGY

THIS Congress is being sponsored by the International Society of Gastroenterology and the host organization in this country is the American Gastroenterological Association. The meeting is to be held in Washington D. C., May 25-31, 1958 at the Sheraton Park Hotel. All physicians interested in gastroenterology are cordially invited to attend. The Chairman is Dr. Harry L. Bockus and anyone desiring information regarding the program, housing, etc. may direct all correspondence to H. M. Bollard, as Secretary General.

The major subjects to be considered at the scientific session are as follows: Peptic Ulcer, Malabsorption and Sprue-like Syndromes, Nutrition and its effect on the Liver and Pancreas, Intestinal Infection and Infestation, Cancer of the Stomach.

NOTICE

MEDICAL SOCIETY OF UNITED STATES AND MEXICO met March 16th and 17th at the San Alberto Hotel, Hermosillo, Mexico. Committee Meetings at 10:00 A.M. on the 16th. Exec. Com. Meeting at 2:00 P.M. on the 16th.

Mexican Chartering Meeting, Mazatlan, Sinaloa, Mexico, May 9, 10, 11th at Bel Mar Hotel.

(Editor's Note: This, as so many notices was received too late for adequate notification to our members. Every effort will be made to publicize forthcoming meetings. But efforts should be made to submit the information at least 60 days prior to the time of the meeting.)

CLINICAL HYPOXIA

The 123rd and 124th monthly, intensive course in Clinical Hypoxia is coming up May 3-4 and June 7-8.

These courses are being presented monthly in New York City as well as in southern, mid-western and western cities by the National Resuscitation Society, Inc., 2 E. 63rd St., N. Y. 21, N. Y.



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PROGRESS IN NEUROLOGY AND PSYCHIATRY, Vol. 11
edited by E. A. Spiegel, M.D. 606 pages. (1956) Grune &
Stratton. \$10.

This truly useful refresher provides the latest
information in neurology, neurosurgery, psy-
chiatry, and basic sciences, condensed with dis-
crimination for practical use. You cannot read
all the journals; this book is equivalent to a good
selected digest, and at a much lower price.

Stacey's Medical Books, San Francisco

THEIR MOTHERS' DAUGHTERS by Edward A. Strecker,
M.D., and Vincent T. Lathbury, M.D. 256 pages. (1956) Lippin-
cott. \$3.75.

The world famous creator of the term "mom-
ism" as applied to boys now teams up to show
how to cut the "unsevered umbilical cord" for
girls, and what happens if you fail. Fathers, of
course, are considered. This text like *Their
Mother's Sons*, will be a cussed and discussed
best-seller that you should read if you practice
any type of medicine, if you are a parent, if you
deal with parents, if you do or don't deal with
mothers or daughters!

Stacey's Medical Books, San Francisco

THE HAPPY LIFE OF A DOCTOR by Roger I. Lee, M.D.
278 pages. (1956) Little, Brown. \$4.

Witty, modest, and warmly personal, this book
is an affectionate yet unvarnished glance at the
medical life as one man has known and loved
it through a wide span of years. Now past
seventy and rounding out his fiftieth year of
medical practice, Roger I. Lee had and has a
career rich in accomplishment and in friendship.
He has been president of the American Medical
Association and of the American College of
Physicians, Professor of Hygiene at Harvard,
member of the Harvard Corporation, and
founder of the Harvard School of Public Health.
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PHOENIX *Clinical* CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL

PRESENTATION OF CASE 41302

A FIFTY-NINE-YEAR-OLD woman entered the hospital because of massive bleeding by rectum.

Six weeks before entry the patient began to pass bulky, black stools. For a month previously she had been taking a polyvitamin preparation including iron (1 pill per day). With the onset of the tarry stools she became slightly constipated and began to experience dyspnea and profuse sweating on exertion. Four days before admission she consulted a physician, who noted her pallor and found her hemoglobin to be low. On the morning of admission she noted marked hordborygmus over the entire abdomen. Two hours later she passed several copious, wine-red, liquid stools.

There was no history of abdominal discomfort, nausea, vomiting, diarrhea, food intolerance or jaundice. The patient stated that she tended to bruise easily but had had not significant bleeding in the past. Intake of alcoholic beverages was denied. She had had a tubal insufflation because of sterility in the past.

Physical examination revealed a pale, well developed and well nourished woman who appeared very tense. Examination of the heart and lungs was negative. The abdomen was slightly distended and showed questionable fullness in the right lower quadrant. There was no masses or tenderness. Peristalsis was moderately increased. A finger specimen of stool was bloody and liquid.

The temperature was 99° F., the pulse 100, and the respirations 16. The blood pressure was 130 systolic, 70 diastolic.

Urinalysis was negative. Examination of the

blood revealed a hemoglobin of 8.2 gm. per 100 cc. and a white-cell count of 6500, with 88 per cent neutrophils. The red cells showed slight to moderate variation in size, slight polychromatophilia and slight to moderate achromia; occasional cells showed stippling. The platelets appeared normal. The prothrombin time was 12 seconds (normal, 13 seconds). The sodium was 138 milliequiv. and the carbon dioxide 29 milliequiv. per liter; the nonprotein nitrogen was 42 mg., the total protein 5 gm., and the bilirubin 0.2 mg. per 100 cc. Cephalin flocculation was + in twenty-four and forty-eight hours. A gastric aspiration yielded white, mucoid material, which contained no free acid and gave a negative guaiac test. Sigmoidoscopy showed negative bowel for a distance of 18 cm. Above this level the lumen was filled with port-wine colored, liquid stools.

The patient was repeatedly transfused. On the second hospital day a gastro-intestinal series revealed no abnormality in the esophagus, stomach or duodenum. A segment of ileum, 3 cm. in length and 60 to 90 cm. from the ileocecal valve, showed a fairly constant filling defect. This could not be dislodged despite repeated maneuvering. A barium-enema examination showed a small area of diverticulosis near the junction of the descending and sigmoid colon. Just distal to this was a rounded area overlying the sigmoid which was interpreted as being a possible diverticulum or polyp. Another small bowel series on the sixth hospital day failed to reveal a filling defect in the ileum. Stool specimens continued to give 4 plus guaiac reactions although the stools were now described as brown and putty like. On the ninth hospital day the hemoglobin was 13.2 gm. per 100 cc., and an operation was performed.

DR. J. M. GREER

The important or the positive things or the "high spots" in the proctol are:—

1. Intestinal bleeding (age and sex probably has little to do with the case).
2. Anemia, which is probably secondary to the loss of blood.
3. Dyspnoea, which is no doubt due to the anemia.

PAST HISTORY

This is essentially negative.

PHYSICAL EXAMINATION

Pale from bleeding, slightly distended abdomen. Rectal finger examination reveals liquid blood specimen. Sigmoidoscopic examination negative except for liquid from above.

LABORATORY WORK — Low Hemoglobin 8.2 gm — 54%: White cell count low, high relative neutrophils 88%. Some changes in the red cells. Prothrombin 12 seconds (normal 13) Sodium 138 (normal 133-136) CO₂ 29 Milliequiv. (normal 26-32). NPN 42 mg. (normal 24-35) Total protein 5 gm. (6-7) Bilirubin 0.2 (normal 0.1 to 0.25). Cephalin flocculation was normal. Gastric aspiration, no blood, no free Hydrochloric acid. The Gastro-intestinal series was negative except for a filling defect 60 to 90 cm. (2-3 ft.) from the ileo-cecal valve and this defect was not found upon the second examination. There was also an area of diverticulosis at the upper sigmoid and a shadow that could be a diverticulum or polyp.

If we can determine where the intestinal bleeding came from we will no doubt have our diagnosis.

I think from our history, physical examination and laboratory work that we can rule out the upper gastro-intestinal tract and this leaves for our consideration the lower ileum and the colon.

It does not seem to me possible for so much bleeding to come from an area of sigmoid diverticulosis or even a polyp. However, I suppose it could be possible. However, I shall rule these areas out as a source of the bleeding.

One of the first things that attracts our attention to the area that could be a cause of the bleeding, in addition to the distended abdomen, is the defect in the lower ileum two or three feet from the ileo-cecal valve. Could this defect have been caused from an adherent blood clot at the mouth or area of a Meckel's Diverticulum? This defect was not present in the second examination six days later. I think that it is highly probable that an adherent blood clot could have caused the defect in the barium study.

Let us discuss for a minute. Meckel's Diverticulum.

Phil Thorek says it is helpful to discuss this condition as the Disease of Two's (2's). It is

found in 2% of all individuals; it favors males two to one (this patient was a female) it is 2 feet from the ileo-cecal valve; it is usually about 2 inches long and is confused with two surgical conditions, namely appendicitis and peptic ulcer: it may contain two types of ectopic tissue, namely gastric and pancreatic tissue and is associated with two complications: hemorrhage and perforation.

It would seem that clinically as well as from the laboratory work done in this case that we can rule out appendicitis and peptic ulcer.

Therefore, I shall present a diagnosis of intestinal hemorrhage from Meckel's Diverticulum and the operation that was performed was no doubt a laparotomy with general exploration and the removal of the diverticulum.

DIFFERENTIAL DIAGNOSIS

Dr. Charles G. Mixer: This case is a problem of massive gastrointestinal bleeding of unknown origin. The bleeding apparently was chronic for about a month and then suddenly increased in amount. I think we might see the x-ray films.

Dr. Joseph Hanelin: The first examination was of the upper gastrointestinal tract and small bowel. There is reasonable assurance from that examination that there was no lesion in the esophagus, stomach and duodenum. A fingerlike defect is present in the ileum approximately 90 cm. from the ileocecal valve, which is about 3 by 1 cm. in size. It was also seen at fluoroscopy and some spot films were obtained of it. A day or two later a barium-enema examination showed several diverticula of the sigmoid; no polyp was seen. In an attempt to redemonstrate the small-bowel lesion, because such lesions are liable to misinterpretation, we repeated the small-bowel study. At that time no lesion was apparent. However, when the films of the second examination were reviewed, it seemed likely that the small-bowel loops in the area of suspected trouble had not been filled. We contemplated doing still another small-bowel examination, but operation was decided upon before further x-ray studies could be made.

Dr. Mixer: I should like to know exactly what this statement about the barium-enema examination means: "Just distal to this was a rounded area overlying the sigmoid, which was interpreted as being possibly a diverticulum or polyp."

Dr. Hanelin: Not infrequently, in the double-contrast examination and sometimes in the post-evacuation colon study, the circular form of a diverticulum will be seen that may simulate the appearance of a polyp.

Dr. Mixer: Would you say that this area noted in the small bowel was consistent with the x-ray picture of an intussusception?

Dr. Hanelin: An intussusception may look like that, and if this is an intussusception, there is no indication of the nature of the underlying lesion, which might be a polyp or any number of other possibilities.

Dr. Mixer: I should first like to make a few general statements about the history and the available data. It seems to me that I can explain the dyspnea and profuse sweating on the basis of anemia. The borborygmus over the entire abdomen is consistent with the sudden influx of a great deal of irritating blood into the bowel. The port-wine-colored, liquid stools suggest that the bleeding was probably from higher than the distal large bowel. Certainly, bleeding from the distal half of the large bowel should be bright red in practically all cases. Of particular interest is the fact that there was no history of abdominal discomfort, nausea, vomiting or diarrhea. In view of the fact, therefore, that this appears to have been an intussusception it must have been an intermittent one.

The patient "had had a tubal insufflation because of sterility." I imagine that this is "red herring," but I tried to connect it with the remainder of the picture. About the only condition that could explain the sterility and bleeding is endometriosis with an implant in the small or large bowel. This patient was fifty-nine years of age and probably had had the menopause. Therefore, though she could have had obstruction from endometriosis in this area, it is practically impossible that she had bleeding from it.

The physical examination was negative except for some confirmatory evidence of anemia and blood in the bowel. The slight fullness in the right lower quadrant suggests slight obstruction. The shift in the neutrophils noted in the smear can be explained, I believe, on the basis of the bleeding into the gastro-intestinal tract. The remainder of the laboratory data were negative except for evidence of chronic blood loss. Though she had achlorhydria, the remainder of the picture was not that of per-

nicious anemia. It can occur in many other conditions. Primary achlorhydria does occur, but it is rare. Again the sigmoidoscopy ruled out disease in the last 18 cm. of the distal large bowel.

With those features and the findings in the x-ray examination in mind I believe that I can rule out certain conditions that cause massive gastrointestinal bleeding. Certainly, lesions in the proximal and distal gastrointestinal tract such as varices, atrophic or hypertrophic gastritis, esophageal hernias, peptic hypertrophic gastritis, esophageal hernias, peptic ulcers and neoplasms in the esophagus, stomach and duodenum and infections and neoplasms of the colon, at least the distal colon, can be ruled out. Also, there was no information on which to base a diagnosis of any of the various types of hemorrhagic disease, which can give rise to gastrointestinal bleeding. These are usually based on defects in the elements of the blood. Finally, there were no data suggesting that one of the intestinal-tract parasites was to blame. I have thus narrowed the problem down to the lesions that occur in the small bowel and proximal larger bowel. I believe I can reduce the possibilities further. In view of the lack of evidence of infection I can rule out regional enteritis, typhoid ulcers, tuberculosis, ulcerative colitis and hemorrhagic or bacillary dysentery, all of which may give rise to massive bleeding. Also, in the absence of pain and of marked symptoms of intestinal obstruction, it seems unlikely that an intussusception that was persistent caused this particular picture. Mesenteric thrombosis is probably unlikely, although mesenteric venous thrombosis can be insidious, prolonged and quite silent in onset.

This leaves me with a rather heterogeneous group of conditions that may conceivably have caused the bleeding. Neoplasms of the small bowel and perhaps of the large bowel frequently bleed, the benign ones being more likely to cause massive bleeding than the malignant ones. The benign lesions are most commonly found in the terminal ileum but can certainly occur in the area that this x-ray film seems to indicate as the source of the trouble. Moreover, they are frequently leading points for intussusceptions, which may reduce themselves and recur. The differentiation of the various types preoperatively is virtually impossible; sometimes, from the x-ray examina-

tion, the radiologist can distinguish the benign from the malignant ones.

The rupture of a blood vessel, as a result of either hypertension or arteriosclerosis, and aneurysms have been reported as causing massive gastrointestinal bleeding. An intramural cirroid aneurysm or the extramural aneurysms of hepatic, splenic, or mesenteric arteries can rupture into the gut. Trauma either externally or internally from a foreign body should be mentioned. Diverticula with or without evidence of diverticulitis occasionally bleed profusely. I recall seeing a patient who had repeated episodes of massive gastrointestinal bleeding for which no cause could be found. At the time of exploration a small diverticulum of the ascending colon, which contained a fecalith, a large eroded blood vessel and a blood clot, was found. That patient has had no bleeding since that diverticulum was removed six years ago. A number of physicians have pointed out that it is not commonly recognized that diverticulitis can result in massive bleeding.

Another lesion to be considered is Meckel's diverticulum or other forms of reduplication of the bowel. Meckel's diverticulum is found in the location of the suspicious area in the small bowel noted in the x-ray examination, but the symptoms more commonly occur in the younger than in the older age group. In some series as many as 60 per cent of them have been reported to cause hemorrhage through peptic ulceration, from aberrant gastric mucosa or as a result of impaired blood supply due to infarcted or intussuscepted bowel. It is possible that, if this was an intussusception, the Meckel diverticulum was leading it. The hemorrhage may be asymptomatic, although it is usually accompanied by pain. The Meckel diverticulum can produce rather puzzling x-ray defects, which change from time to time.

Perhaps I should have paid more attention to the abnormalities in the sigmoid, but they are not so evident in the films as they were described in the protocol. Possibly, the slight evidence for an infectious process should have been emphasized more; I am sure that there are many conditions that can cause massive bleeding that I have not mentioned. Harvey Stone, in an excellent paper on massive melena of obscure origin, classified these cases as those in which a lesion is found that may possibly account for the melena and those in which

no cause is ever found even sometimes at autopsy. Inasmuch as this is a clinicopathological conference I suspect that this case falls into the first category, and inasmuch as I have to make a choice, I shall say that the patient probably had a Meckel diverticulum.

Dr. Benjamin Castleman: Dr. Ali, would you like to comment?

Dr. Munawar Ali (from Pakistan): The only thing that I have in mind is an intussusception due to Meckel's diverticulum, which sometimes can give rise to episodes of bleeding.

Dr. Castleman: Dr. Chapman, you followed this patient? Would you like to say a word?

Dr. Earle M. Chapman: Dr. Hanelin discussed with me a third examination, but the anxiety of the patient and her insistence on going home were such a feature in this disease that we believed action had to be forthcoming immediately. Dr. Bartlett and I pressed her to have the operation, and we were indeed pleased at the outcome of it.

Dr. Warren Point: I have never personally seen or heard of tarry, black stools with a lesion below the ileocecal valve. It seemed to me that the definite history of black, tarry stools almost unequivocally placed the lesion above the ileocecal valve. Since, during the intubation, no blood was found in the stomach juices, we believed that the lesion was below the pylorus, and therefore, that it was a small-bowel lesion of some kind.

CLINICAL DIAGNOSIS

Polyp of the small bowel.

DR. CHARLES G. MINTER, JR.'S DIAGNOSIS
Meckel's diverticulum.

ANATOMICAL DIAGNOSIS

Everted Meckel diverticulum, with mucosal ulceration.

PATHOLOGICAL DISCUSSION

Dr. Marshall K. Bartelett: I should like to emphasize two points. I think it was very astute of those who were taking care of this woman early in her hospitalization to obtain a gastric aspiration. Of course, if the bleeding had stopped, it might have been misleading, but usually it is helpful to have an aspiration done as soon as possible after entry. Also, prompt sigmoidoscopy gave another bit of information that was useful.

It seemed to us that, with the encouragement that Dr. Hanelin had given us and the fact that on two or three occasions the patient had had substantial gastrointestinal hemorrhages, it was safer to explore her than to treat her expectantly as she would have preferred. Our preoperative diagnosis was polyp of the small bowel, which we thought the lesion that Dr. Hanelin had shown us was.

We begin our exploration at the ilcocecal valve and worked upward for 45 to 60 cm., where we came upon an intussusception of about 7 cm. in length. The leading point of the intussusception was a tubular structure about the size and shape of my little finger within the lumen of the bowel. The intussusception was easily reduced, and the bowel over the base of this intraluminal structure was opened. The lesion was readily recognized as a Meckel diverticulum, which was completely turned inside out. The mucosa at its tip was ulcerated. It was very simple to deal with technically and was excised.

Dr. Mixer: One more point: Stone, in his paper, emphasized that massive bleeding from the gastrointestinal tract of obscure origin had better be treated conservatively unless there is a definite indication for operation such as a demonstrable source for the bleeding or to save the patient's life. We have all seen these patients subjected to an exploratory laparotomy in which every inch of the bowel and the entire abdominal contents are examined thoroughly and yet nothing is found.

Dr. Castleman: The Meckel diverticulum was inverted into the lumen of the bowel and intussuscepted so that the musoca was on the outside. The tip seemed like a little tumor, and it was ulcerated. At first glance I thought that this might be a lipoma that was the leading point for an intussusception, but this was because the serosal fat was on the inside. We looked carefully for gastric epithelium, although we did not expect to find any because the ulceration was not of the peptic type.

Dr. Chapman: May I make a comment on Meckel's diverticulum? I had occasion to read Meckel's book, published in 1806. Meckel was the third member of a German family of considerable renown. His father and grandfather had been physicians, surgeons and anatomists. Meckel, the third, described this anomaly to

which his name was attached, but if one reads carefully one finds that Meckel did not observe this diverticulum originally. Another man with an unpronounceable name that I have forgotten had described it; Meckel thought it was a "good thing" and publicized it. This often happens in medicine, I am told. Perhaps we do not think of Meckel's diverticulum often enough; 2 per cent of autopsies show a Meckel diverticulum. I had not been aware of this extraordinary frequency of Meckel's diverticulum in the whole population.

URINE SUGAR ANALYSIS FOR DIABETICS

THE film "Urine Sugar Analysis for Diabetics", developed in cooperation with the medical profession, is available at no charge to the Medical and Allied Professions through Ames Company, Inc.

The film was made as a visual aid to be used in the education of diabetic patients and shows the relationship between carbohydrates and insulin. It also explains in lay language the meaning of various diabetic conditions. It has been produced on 16 mm. film in color and sound track with a running time of approximately 10 minutes. Appropriate "hand-out" literature accompanies the film.

Showings at Diabetic Clinics, Diabetic Lay Societies and other diabetic groups must be requested by the Medical or Allied Professions to Ames Company, Inc., Elkhart, Indiana or an Ames representative.

Book Review

CLINICAL UNIPOLAR ELECTROCARDIOGRAPHY by Bernard S. Lipman, M.D., and Edward Massie, M.D. 3rd ed. 397 pages. Illustrated. (1956) Year Book. \$7.50.

This popular, concise reference book has already reached a third edition. Simplicity and practicality are again keynotes. The procedures described are used by the authors in their teaching at Washington University and Emory University School of Medicine. New chapters of vector tracings have been added. An entire section has been added on congenital and acquired heart lesions, with occasional pre and postoperative tracings. This we recommend without reservations.

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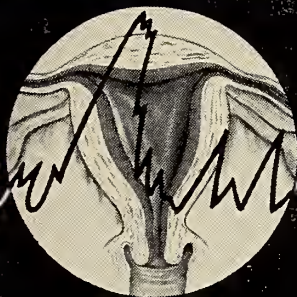
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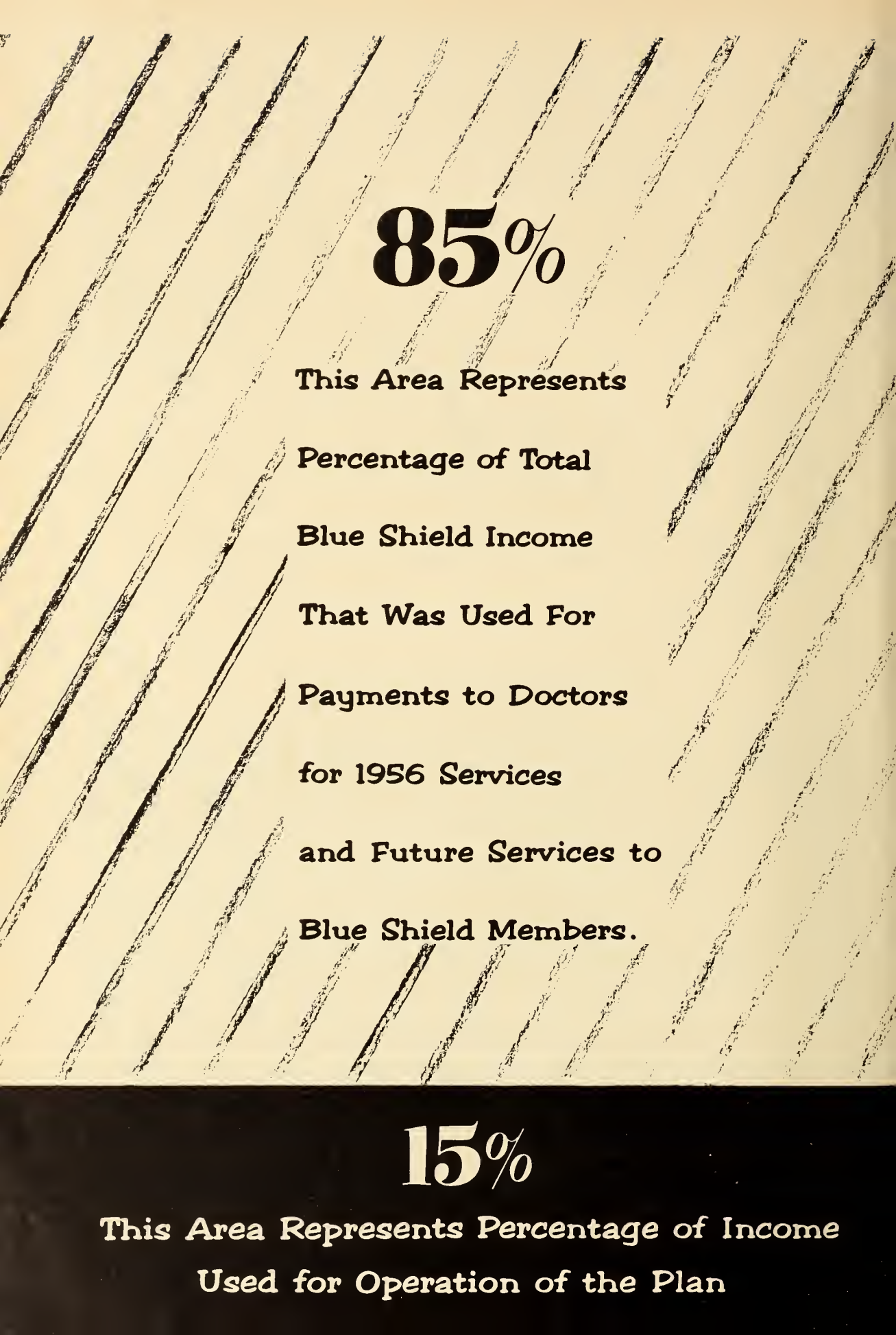
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Woman's AUXILIARY

LEGISLATION

THE 85th Congress convened on January 3, 1957 for a two-year stay in Washington with Health again being a major issue.

Up to this time, there has been nothing for us to take action on, however, the following bills have been introduced, which the AMA is vitally interested in and we will undoubtedly be called upon in the near future to put pressure on our Legislators and Congressmen regarding these bills.

Another version of the Wagner-Murray-Dingell bill, which was successfully defeated in 1943, is again before Congress. Because some sections have since been enacted into law piecemeal, the 1957 version is minus these features: education of health personnel, medical research, Hill-Burton expansion, aid to rural and shortage areas, more state grants for health work, and grants for maternal and child health. The bill provides a contributory system of health insurance covering the working population similar to Social Security. Covered workers and their families would be eligible for preventive and diagnostic exams, lab and x-ray services, hospitalization up to 60 days, dental services, more expensive drugs, special appliances and eye-glasses. A separate bill to be introduced later would charge workers 1½% of earnings or up to \$90 a year with employers contributing a like amount.

Senator Langer (R — N. D.) has introduced a bill eliminating the starting age for disability payments under Social Security (now age 50). It would also eliminate a provision of the present law that reduces Old Age and Survivors Insurance payments to the extent the beneficiary also is receiving money under other Government programs, such as VA or workmen's compensation. If you will remember this age reduction for disability payments was predicted last year when H. R. 7225 was being so vigorously fought.

The Jenkins-Keogh bills would permit the self-employed, including physicians, to annually

deduct from adjusted gross income, as much as 10% of net earnings or \$5,000 whichever is the lesser, when paid into retirement plans. The AMA is in favor of this bill.

Senator Bricker (R — Ohio) is renewing his efforts to protect domestic law against possible encroachment by treaties. He has presented a new version of a constitutional amendment, an earlier version of which was defeated in the Senate by a one-vote margin in 1954. The AMA supports the Bricker Amendment in principle. The new version reads:

SECTION 1. Provision of a treaty or other international agreement not made in pursuance of this Constitution shall have no force or effect. This section shall not apply to treaties made prior to the effective date of this Constitution.

SECTION 2. A treaty or other international agreement shall have legislative effect within the United States as a law thereof only through legislation, except to the extent that the Senate shall provide affirmatively, in its resolution advising and consenting to a treaty, that the treaty shall have legislative effect.

SECTION 3. An international agreement other than a treaty shall have legislative effect within the United States as a law thereof only through legislation valid in the absence of such an international agreement.

SECTION 4. On the question of advising and consenting to a treaty, the vote shall be determined by Yeas and Nays, and the names of the Senators voting for and against shall be entered on the Journal of the Senate.

The foregoing is just a brief resume of a few of the more pertinent bills which have been introduced in this session of Congress and that we feel the Woman's Auxiliary should be familiar with. If the AMA requests us to take any action on any of the bills now in Congress, you will be notified.

Mrs. Paul S. Causey, Chairman
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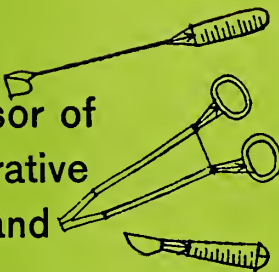
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Original ARTICLES

Organic Phosphate Insecticide Poisoning

By Drs. Lee Ehrlich*, Paul B. Jarrett, R. J. M. Zeluff
Phoenix, Arizona

IN ARIZONA the increasing employment of the organic phosphoric esters insecticides in agriculture, with the potential hazard of accidental poisoning, poses a serious problem. Intoxication with these preparations has been limited almost exclusively to personnel in direct contact with the material, e.g. mixers and sprayers in the field. (3) (4) However, airplane disasters involving pilots engaged in spraying crops have also been reported, (6) and occasionally children have absorbed these substances by inhalation, ingestion, or from skin contact. (5) It is deemed worthwhile, therefore, to review the symptomatology, physical signs, and therapy of phosphate insecticide poisoning, and to report a recent fatality.

A commonly employed, and one of the more poisonous organic phosphorus insecticides is parathion (P-nitrophenyl diethyl thiophosphate) which is relatively non-volatile, insoluble in water, (1) and is oxidized in vivo to its active anticholinesterase analogue, paraoxon. The presence of this latter property is responsible for the delay between absorption and the onset of symptomatology as indicated below. (7)

Absorption in lethal doses may occur through any portal — skin, ingestion, or inhalation as in aerosol preparation. The pathogenesis of organic phosphorus insecticide poisoning de-

pends on their selective inhibition of cholinesterase, (8) the hydrolyzing enzyme responsible for maintaining proper concentrations of acetylcholine to mediate nerve impulses in the autonomic ganglia, central nervous system and at the parasympathetic and neuromuscular end organs. It is important to note that exposure doses are cumulative, and that frequent small doses are additive. (2)

The onset is frequently characterized by nausea, headache, and giddiness, followed by increased severity one to two hours later and as manifested by abdominal cramping, vomiting, and diarrhea. This is associated with spontaneous muscular fasciculations followed by disorientation, ataxia, dysarthria, involuntary flailing movements of the extremities, and convulsions. Profuse diaphoresis is noted along with tachypnea and stertorous respirations as secretions from the serous and mucous glands of the respiratory tract accumulate. These symptoms are followed by cyanosis, coma, and apnea resulting from paralysis of the respiratory center and of the thoracic and diaphragmatic musculature. Death ultimately results from anoxia, leading to circulatory collapse. Overt atrio-ventricular block has been described in the experimental animal but never in the human. (1)

CASE REPORT: I. M., a 16-year white male had first assumed work employing a parathion

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solution for aerial spray application, two days prior to hospital admission. On the day before admission, an undetermined amount of 95% parathion concentrate was accidentally spilled onto his trousers. He was immediately immersed in a nearby pond without removing his clothes and subsequently continued to work. The next afternoon while wearing the same trousers, he complained of weakness, giddiness and excessive perspiration and was immediately taken to the emergency room of a Phoenix hospital. The extent of any subsequent exposure to parathion is not known.

Initial examination disclosed a state of lethargy, confusion, marked diaphoresis, constricted pupils, excessive salivation, and spontaneous generalized fibrillation of the skeletal muscles. The blood pressure was 190 systolic, 100 diastolic; the pulse rate was 120. Within an hour, a total of 6 mg. of atropine sulphate was administered intravenously in divided doses, along with supportive intravenous therapy and oxygen. The skin was thoroughly cleansed.

His condition initially improved and then, despite therapy, suddenly deteriorated with the development of continuous convulsions, hyperthermia (107°), apnea, deep cyanosis, profuse diarrhea and coma. Endotracheal intubation was immediately performed and intermittent positive pressure oxygen therapy instituted. The body temperature was promptly reduced to 102° F. with ice packs. In spite of continuation of atropine in doses of 2 mg. to 3 mg. at frequent intervals, the convulsions continued and the pupils remained constricted. However, with 6 mg. D-curare intravenously every 20-30 minutes as required, the convulsions were well-controlled. A tracheostomy was performed to insure a patient airway, and the patient was transferred to a Drinker respirator. A total of 40.92 mg. of atropine was administered during the ensuing 15 hours. He exhibited temporary resumption of spontaneous respiration but did not regain consciousness. Pulmonary edema developed followed by hypotension which responded to digitalization and nor-epinephrine. His course progressively deteriorated however, and he expired without ever regaining consciousness eight days after admission.

Ethrocytic cholinesterase activity on the third day revealed 41% activity with a plasma level of

40%. Autopsy examination was not remarkable except for anticipated alterations as a result of hypoxia.

THERAPY

1. Adequate, immediate and constant atropinization is the keynote of therapy, keeping in mind that these patients possess an increased tolerance to atropine. In a series of 41 patients with 23 recoveries, all of whom had absorbed lethal doses as reported by Freeman and Epstein,(9) survivors had received atropine initially in an average time of one hour, twenty minutes after onset, whereas the average interval was three hours in the fatal cases. In addition, the survivors had received approximately four times the dosage of atropine (average in excess of 3 mg.) during the first five hours. Consequently, atropine 2 mg. intravenously should be administered immediately if cyanosis is not present, and repeated at five-minute intervals until atropinization is accomplished as manifested by dry warm skin and tachycardia. The effects of intravenous atropine are noted in one-to-four minutes with maximum effect at eight minutes. As much as 40 mg. in twenty-four hours has been previously reported without clinical evidence of atropinization. The state of atropinization should be maintained for twenty-four hours in mild cases, and preferably for forty-eight hours in severe cases.

2. Morphine sulphate and aminophyllin are definitely contraindicated, and should never be administered.

3. Respiratory resuscitation: Irreversible changes in the central nervous system or death may occur from failure to prevent hypoxia and accumulation of carbon dioxide. Of primary importance to adequate respiration is the establishment and maintenance of a patent airway. If the individual has insufficient respiration, despite an unobstructed airway, then breathing must be assisted or controlled to insure normal ventilation. Manual methods of artificial respiration may be necessary until more refined techniques are available. The method of Holger-Nielsen is probably the most universally acceptable.(10) Breathing may be assisted for short periods with a face mask and anesthetic bag. The standard method for treating patients with prolonged, severe respiratory insufficiency is with the tank or Drinker-type respirator. How-

ever, if this method is employed, it is imperative to prevent obstruction to the airway. Even partial obstruction, which may occur with accumulated secretions, may lead to pulmonary edema. There should be no hesitancy to perform a tracheostomy if the situation warrants.

Respiration must be supported as long as it is inadequate. It is universally agreed that oxygen is the agent to use in performing artificial respiration. Most workers also agree that carbon dioxide has no therapeutic value in resuscitation generally.(11)

4. If indicated, decontaminate the skin with soap and water, or gavage the stomach with sodium bicarbonate or other mild alkali.

5. Intravenous fluids as indicated particularly in presence of diaphoresis, diarrhea and vomiting should be administered, exercising care to avoid pulmonary edema. Suggestions to completely restrict fluids, thus producing dehydration and viscid bronchial secretions, are not physiologic in our opinion and are unwarranted.

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Laboratory Diagnosis of Phosphate-Ester Insecticide Poisoning

By Maurice Rosenthal, M.D.
Phoenix, Arizona

LABORATORY DIAGNOSIS

SINCE THE clinical course of severe poisoning is rapid, it is essential that the diagnosis of phosphate-ester poisoning be made at the earliest possible moment, if treatment is to be effective. There is little difference between the clinical picture resulting from the several compounds of phosphate-ester poisoning and the treatment is the same.

Autopsy examination of many species of animals exposed to lethal, toxic and/or non-symptomatic doses either once or repeatedly over prolonged periods by any route of exposure has never shown any tissue damage typical to the phosphate-ester compound. In humans there have been no significant gross or histologic changes found in the tissues except cerebral and pulmonary edema. However, secondary changes due to anoxia, such as petechial hemorrhages of the brain, pleural surfaces of the lungs, and epicardial surface of the heart may be encountered in delayed death. A complicating bronchopneumonia may also occur. Furthermore, the only significant laboratory finding is cholinesterase inhibition. In phosphate-ester insecticides, such as parathion, malathion, and thimet poisoning, the cholinesterase level of the blood and serum has been shown to be greatly reduced. At post mortem examination, the same may be demonstrated for the cholinesterase level of the brain or other tissues provided fresh unfixed tissues are employed.

The mean cholinesterase values of normal persons living without exposure to organic phosphorous insecticides have been found by various workers to be: red blood cell 0.67 to 0.86 pH units/hour; and plasma 0.70 to 0.97 pH units/hour. Using the normals originally published by Michel of pH 0.703 for plasma and

0.753 for red cells, normal ranges for unexposed individuals are 60 to 250% in plasma and 80 to 120% in red cells. However it is noteworthy that the normal levels for any given individual remain quite constant from day to day and month to month. There is a great deal of variation between individuals in normal levels of activity in both plasma and red cells, and this variation is particularly great in plasma.

Most laboratories report cholinesterase activity as a percentage of normal. Such a report is readily understood and less confusing than a report which expresses the result in terms of the units of measurement, since the latter differ with the various methods. This practice has the further advantage of permitting comparison of results from different laboratories. However, each report should clearly state the method of determination and, in the case of the electrometric method, the normal values for the particular laboratory.

Measurement of esterase activity may be performed by any one of a variety of methods. Most methods in common use today are based upon the principle of measuring, directly or indirectly, the amount of acetic acid liberated by a known quantity of blood or tissue from a system to which excess of acetylcholine has been added. The various methods fall into three general groups, namely titrimetric, manometric and colorimetric. The titrimetric methods may employ either an indicator or a potentiometer to measure the decrease in pH of a system caused by the acetic acid liberated from acetylcholine. The Michel electrometric technique is the prototype of this type of test. The manometric procedure measures the CO₂ liberated from a buffer system containing bicarbonate by the acetic acid formed by the hydrolysis of acetylcholine by the action of the enzyme. The colorimetric method depends upon measurement of residual acetylcholine by determining colori-

Diagnostic Laboratory, 1130 E. McDowell Road, Phoenix, Arizona.

metrically the amount of hydroxamic acid formed from the interaction of acetylcholine and hydroxylamine. The colorimetric test is possibly somewhat less accurate than the electrometric and manometric methods. Most investigators use either the manometric or the Michel electrometric technique and for routine use the latter has been found to be more practical on the basis of simplicity and brevity consistent with a satisfactory degree of accuracy.

Further, it is quite important that plasma and red cell activity be determined separately. Red cell cholinesterase is specific for acetylcholine and hence reflects with fair accuracy the state of the nervous system enzyme. On the other hand, the plasma enzyme is nonspecific and has no functional relationship to the nervous system enzyme and therefore does not necessarily reflect the activity of the nervous system enzyme. Furthermore, the plasma enzyme is inhibited by a wide range of chemical substances, as well as in certain morbid states such as hepatic insufficiency, and which has no effect on the red cell or neural enzyme, so that it is quite possible, in the absence of phosphate-ester exposure, to encounter a low plasma and normal red cell level. In such a case, if the whole blood has been tested, the combined values from plasma and red cells would in this instance be abnormally low, thereby erroneously pointing to parathion poisoning. On the other hand, it is useful to test the plasma enzyme, for it is more sensitive to parathion than the red cell enzyme and, therefore, will fall earlier (and also return to normal earlier).

The great advantage of a pre-exposure measurement of cholinesterase activity is of utmost importance and quite obvious. If the patient has had previous tests performed so that his normal or baseline level of activity is known, then any significant deviation from this level in both plasma and red cells may be regarded as a positive test. If the case is one of acute poisoning, there will usually be no doubt, for symptoms rarely appear until both plasma and red cell levels fall below 50%. Difficulties in interpretation arise when an individual has had one or more minimal exposures and his own normal level is not known.

When the pre-exposure level is unknown, a presumptive diagnosis may be made if both

plasma and red cell levels are below an arbitrary level of 75% or if serial measurements taken at intervals of a few days during continuing possible exposure reveal declining activities.

PREVENTION OR PROPHYLACTIC

Phosphate-ester insecticide (such as parathion or malathion) poisoning can be prevented if the recommendations for safe handling that are published by manufacturers, formulators and governmental agencies are followed strictly. Furthermore, one of the most important aspects of the prevention of accidents is the routine, periodic determination of cholinesterase levels in plasma and red cells. If workers who are handling parathion, or functionally related substances, show declining levels of activity, they should be removed from further contact until these levels are returned to normal.

INSTRUCTIONS FOR COLLECTING, PREPARING AND SHIPPING BLOOD SAMPLES FOR CHOLINESTERASE DETERMINATIONS

5 cc of blood is collected by venipuncture. Heparin (one drop) is the anticoagulant of choice. Sodium citrate may be used if heparin is unavailable. In either case the minimal amount that will prevent coagulation should be used. The cells and plasma should be separated if possible, and shipped in separate tubes. However, whole heparinized blood may be sent to the laboratory. Hemolysis is to be avoided.

The samples must be refrigerated during shipment. Two methods of accomplishing this are suggested:

(1) The samples, in small tubes (preferably plastic) are securely stoppered, are placed in a small plastic bag. The air is expressed from the bag, and the bag closed with a rubber band and placed in a thermos bottle with several ice cubes. This may then be packed in a carton for shipment.

(2) A "refreezant" of the type sold by sporting good stores for keeping picnic lunches and drinks cold may be used. (These require freezing in the deep freezer or ice cube compartment for 24 hours prior to use.) In this case, the tubes should be isolated from the refreezant by

a layer of cotton in packing for shipment. Dry ice must never be used.

The fastest means of transportation should be employed.

SUMMARY

(1) Cholinesterase inhibition is the only significant laboratory finding. No important nor characteristic morphologic changes are found in the parenchymatous organs of the body except pulmonary and cerebral edema or secondary changes due to anoxia. Depression of cholinesterase activity of both plasma and erythrocytes precedes the onset of signs and symptoms and is invariably associated with this condition.

(2) Unequivocal inhibition of red cell cholinesterase must be demonstrated to justify a de-

finite diagnosis, and a diagnosis that is made in the absence of depressed cholinesterase levels is open to grave doubt.

(3) The value of pre-exposure cholinesterase levels of workers handling phosphate-ester insecticides for the prevention of poisoning cannot be overestimated.

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A Brief Summary Of The Present Therapy Of Collagen Diseases

By Harry E. Thompson, M.D., F.A.C.P., and Harold J. Rowe, M.D.
Tucson, Arizona

ALTHOUGH excellent reviews of the recent progress in the treatment of collagen disorders have appeared(1) (2), it is thought that a brief summary is indicated since an increasing number of cases of collagen disease has been appearing in the Southwestern United States.

The disorders included in the classification of collagen disease are Systemic Lupus Erythematosus, Polyarteritis (Periarteritis Nodosa), Scleroderma, and Dermatomyositis. All of these exhibit pathologic changes in the intracellular substance, or collagen, and also in the fibroblasts, elastic fibers, and reticulum. Microscopic changes may be those of inflammation, proliferation, or degeneration.

The most frequently seen of the group is Systemic Lupus Erythematosus. The cause of this disorder is unknown. While no definite cure has yet been discovered, the acute exacerbations which occur may often be suppressed and long remissions produced by judicious therapy. We have observed a case of sixteen years duration and cases of five and ten years duration are under observation at present.

Good nutrition, avoidance of undue exposure to sunlight in those cases with sensitive skin (most of our cases in this area show no ill effects from the predominately sunny climate), protecting the patient from exposure to bacterial and viral infections if they are present in the immediate environment, transfusions if the patient becomes anemic (under 12.0 grams hemoglobin, or 4,000,000 erythrocytes), and adrenocortical steroids or anterior pituitary corticotrophic hormone (hereafter referred to as ACTH) therapy all help to suppress the acute stage and may induce a remission.

In the acute stage, Prednisone or Prednisolone in the doses of 20-40 mgms. in divided doses over a period of twenty-four hours may be necessary, or ACTH intravenously in doses of 10-30 units in 5% glucose in water given slowly over a period of four hours may be used to effect a rapid suppression. Long acting ACTH in doses of 40-80 units in twenty-four hours may be used, but its action is slower than when given by the intravenous route. In the chronic cases, smaller doses of Prednisone or Prednisolone such as 5-10 mgms. given in divided doses in twenty-four hours, or long acting ACTH 20-40 units daily, or two to three times weekly, may be adequate. It has been our experience that many patients can do well without these steroids when in a remission, and they may be resumed if and when an exacerbation occurs. Antibiotics for bacterial or viral infections in these patients should be used with caution since many patients are hypersensitive to drugs. Sulfadiazine or any of the sulfonamide mixtures should probably not be used for this reason. If an infection should occur, a more rapid recovery is obtained if the antibiotics and adrenocortical steroids are used concomitantly. Antimalarial drugs such as Chloriquine and Mepacrine have been used in Systemic Lupus Erythematosus by several investigators. Antihistamine drugs have been tried but the results have been discouraging.

Polyarteritis (Periarteritis Nodosa) is another member of this group for which no cure is known. If any sensitizing antigen such as drugs, particularly sulfonamides, bacterial infection, or other antigenic substance is suspected, it should be eliminated. Good general care and nutrition are essential. Antihistaminic drugs seem to be helpful in some cases. Transfusions may be necessary to correct anemia if present. Adreno-

cortical steroids and ACTH may be used as discussed in Systemic Lupus Erythematosus and may be very beneficial, but unfortunately, the results are usually temporary. Sympathectomy for the hypertension that may accompany this disorder is helpful in selected cases.

Systemic Scleroderma, the next member of the group, may present itself as an acute fulminating process with fever, malaise, arthralgia and vasomotor changes resembling Raynaud's Disease. Fibrotic changes may rapidly affect the lungs, kidneys, gastrointestinal tract, or cardiovascular system. Immediate suppression of these changes should be attempted with the larger doses of adrenocortical steroids, or ACTH intravenously in an effort to induce a remission, but very often this is unsuccessful. Most cases of scleroderma progress in a slow, chronic fashion with exacerbations and remissions making the results of drug therapy difficult to evaluate. Adequate supportive therapy is essential and the smaller doses of adrenocortical steroids or ACTH may be tried as in Systemic Lupus Erythematosus. Physiotherapy and exercise should be used to prevent deformities, and maintain muscle function. Definitive treatment may be necessary for involvement of individual body systems such as in congestive heart failure, pulmonary fibrosis, or esophageal atrophy that may occur.

The least frequent of the group is Dermatomyositis. The exact etiology is unknown, and treatment is symptomatic. Some cases seem to be associated with neoplasm and the dermatomyositic symptoms may subside with the removal of the malignant lesion. Treatment consists of good nutrition, physical therapy to prevent muscle and joint deformities, and adrenocortical or ACTH therapy in an attempt to suppress the severity of the process.

Two other entities, which are sometimes grouped with the collagen group, are Rheumatoid Arthritis and Rheumatic Fever.

In Rheumatoid Arthritis reliance should be placed on basic therapy consisting of good nutrition, adequate rest, specific muscle exercises,

salicylates and gold salts.(3) Small maintenance or optimal doses of Prednisone or Prednisolone, such as 5-10 mgms. given in divided doses daily, or long acting ACTH, 20-40 units two to three times weekly may be used to aid in suppressing the disease. Smaller doses of steroid help minimize the side effects of these drugs. The adrenocortical steroids and ACTH should be discontinued during a remission if possible.(4)

In Rheumatic Fever, it is agreed that the eradication of the Beta Hemolytic Streptococci by the use of penicillin (or other antibiotics if the patient is penicillin sensitive) is necessary. Rest and salicylates are indicated in all cases. In the severely ill patient, large doses of Prednisone, Prednisolone, or ACTH may be necessary to suppress the hyperthermia and minimize the undesirable effects of these steroids, i.e., salt retention, edema, hypertension, and gastritis. Daily prophylaxis and antibiotics should be instituted to prevent further Beta Hemolytic Streptococci infection and should be continued indefinitely.

If long term therapy is necessary with adrenocortical steroids in either Rheumatic Fever or Rheumatoid Arthritis, some investigators(1) have recommended that long acting ACTH be given in doses of 40-160 units daily for ten days every four to six months. If symptoms of adrenopituitary suppression persist in spite of low maintenance dosage and corticotropin administration, gradual discontinuance of the steroids may be necessary.

SUMMARY

In summary it may be stated that while no definite curative therapy for this group of disorders of the connective tissue is known, supportive aid can be offered in each case to greatly improve the prognosis.

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A NEW LOW pH 2.0 TO 2.5 VAGINAL AND CERVICAL POWDER AND JELLY*

A Newly Discovered Very Low pH Without Burning Vagina.

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TRICHOMONAS vaginalis, Monilia albicans and non-specific vaginal micro-organisms are becoming or have already become "chemical fast" to most vaginal and cervical medications which have been used for 5 or more consecutive years. This is being observed by more and more physicians as the years pass. It is believed that Trichomonas vaginalis will usually become resistant to a medication in 2 to 5 years. The author now sees Trichomonads swimming around in medications in the vagina which he helped to develop and which was a very efficient vaginal and cervical preparation 5 to 10 years ago.

Newer discoveries about hydrogen ion concentration (pH), fungicides, trichomonacides, bacteriacides, buffers, spreading agents and acids has helped in improving the treatment of vaginal and cervical infections.

The addition of an acid to vaginal and cervical medications used previously was of no value since these preparations were not buffered. With the newer knowledge that vaginal and cervical secretions are also very highly buffered, in fact, vaginal secretions are one of the most highly buffered secretions of the body, newer knowledge has shown that if a medication is added to this highly buffered vaginal and cervical secretion it had to be even more highly buffered. With the present knowledge of chemistry (buffers), the pH (acidity) of the vagina can be maintained at almost any desired level. Also the newer knowledge of "spreading agents" has also aided very much in improving new vaginal and cervical medication.

Most medications used previously could not reach the vaginal epithelium surface due to the presence of a "moist layer." The new "spreading agents" not only destroy the micro-organisms by "electrocuting them", but carry

the new medication down to the vaginal epithelial surface and into the areas between the folds or rugae in the vagina.

Twenty years ago, the author contributed the first of his papers on vaginal and cervical infections. At that time, there were very few papers in the literature on leucorrhea, fewer on Trichomonas vaginalis, still fewer on Monilia albicans, and even fewer still on non-specific infections of the vagina and cervix.

Since then he has concentrated more or less on the study of these conditions and the organisms which cause them. In the ensuing years, a total of approximately 30 papers have borne his name, and more than 50 scientific exhibits on this subject have been presented throughout the United States.

Quite naturally during this period, the author became acquainted with scores of preparations for the treatment of Trichomonas vaginalis vaginitis, Monilia albicans infection and other pathological conditions of the vagina and cervix, as well as designed compounds to treat these infections. During this period, the author also became familiar with various methods of treatment (technique) and developed several of his own therapeutic formulas and his own techniques of treatment. In retrospect it was found that each compound used, was, in some respects, a little more effective than the preceding one and that each change in his own technique was that much more efficient.

One of the most important findings in this leucorrhea study was the Trichomonas vaginalis, Monilia albicans and other vaginal micro-organisms are becoming or have become "chemical fast" to vaginal and cervical medications previously used. These pathogenic vaginal and cervical micro-organisms have developed or are developing a resistance to most previous vaginal and cervical medications. The first vaginal and

*From the Obstetrical and Gynecological Leucorrhea Clinic, Research Division, Houston, Texas.

cervical preparations worked out by the author 5 to 15 years ago, no longer are the efficient medications that they used to be. This drug no longer destroys the protozoan, fungi and other abnormal pathogenic vaginal micro-organisms like it did. They have developed a resistance to these medications and now actually swim around in the medication when these drugs are placed in the vagina. One can see why a new and more efficient vaginal and cervical preparation is needed — a preparation to which these organisms have not become “chemical fast”. This has been done in a new buffered, adhesive, new low pH (acidic) carbohydrated vaginal and cervical powder and jelly.

Vaginal and cervical micro-organisms want to live just as we do. There is a world struggle, a Hot War, between pathogenic micro-organisms and vaginal and cervical medication. In most cases, after a certain lapse of time, the micro-organism wins.

This knowledge of leucorrhea during the past 20 years, has been based upon sound, scientific research. Thousands of “electrical” and “electronic pH” determinations, glycogen determinations of vaginal secretions and in vaginal epithelium have been done in the author's own laboratory; and more than 3000 clinical patients have been treated in the City County Hospital (Jefferson Davis) and in the author's own leucorrhea research clinic, more than 2000 private patients have been treated by the author. From this mass of scientific evidence over 20 years of continuous study on leucorrrheas, the author has now discovered a new chemical method whereby one can now make the pH of the vagina to be pH 2.0 to 2.5, without this very low pH acidity burning the patient's vagina and perineum. Also discovered are new adhesives that cause vaginal and cervical medications to stick and remain stuck in the vagina thereby eliminating the leakage and messiness of previous medications used in the vagina and on the cervix. No vaginal pack or external pads are now necessary.

The “new low pH powder and jelly” contains the following:

BUFFERS — Total 2.75%

Potassium Bi-hydrogen tartrate
Potassium aluminum sulfate

THREE ACIDS — Total 2.75%

Citric acid, Boric, Di-hydro-succinic acid

WETTING AND DETERGENT AGENTS — Total 8.75%

Oxides of Iron, Aluminum, silica, and magnesium
Potassium aluminum sulfate

DODERLEIN BACILLI MEDIA — Total 85.5% (Normal vaginal micro-organism food)

Dextros
Complex carbohydrates

FILLER, ADHESIVE AND BINDER — Total 0.25%

Hydrous aluminum silicate

In plastic squeeze powder blower — approx. 5 ounces. pH 2.0 to 2.5 without burning vagina and perineum. Non-allergic and non-toxic. Will not leak or run out of vagina. Non-messy. Non-odorous.

INSTRUCTIONS

AT OFFICE: The physician may use “New Low pH Powder” in his office by using a speculum to open the vaginal vault, and by pressing on the sides of the plastic bottle, the new low pH (2.0 to 2.5) powder will be blown all the way back into and over the entire vaginal walls. The vagina is filled $\frac{3}{4}$ full. As the speculum is being removed from the vagina, a large cotton plug is held with a uterine dressing forcep in the speculum, at the introitus, wiping off the excess and loose low pH powder from the posterior blade of the speculum, as the speculum is being withdrawn from the vagina. The powder in the vagina is pushed back and deeper (packing the powder) into the vagina with the cotton plug on the uterine dressing forceps. The excess and loose pH powder remaining on the cotton plug is wiped, dusted and rubbed over the perineum and public hairs and between the lips of the vagina.

NO VAGINAL OR INTROITAL PACK OR PACKS OR EXTERNAL PAD IS NECESSARY SINCE THIS NEW LOW pH POWDER ADHERES TO THE VAGINAL WALLS SO WELL THAT IT WILL NOT RUN OUT OF THE VAGINA ONTO THE PERINEUM AND INTO THE PUBIC HAIRS, THEREBY ELIMINAT-

ING THE MESSINESS OF MOST PREVIOUS MEDICATIONS.

This new pH powder will remain within the vaginal vault and on the vaginal walls for 4 to 7 days. It is very soluble in vaginal fluids and warm water so it is easily douched out with an acid douche. The physician blows the new low pH powder into the vagina every 4 to 7 days for 3 to 6 treatments.

AT HOME

After office treatments are finished the patient blows in the powder every 2 to 5 days for years. By blowing this very low pH powder into the vagina every 2 to 5 days, the physico-chemical (normal physiology) properties are kept normal and no pathogenic micro-organisms can live or grow. At the very low pH of 2.0 to 2.5 no pathogenic micro-organism can survive.

The patient inserts the barrel of a contraceptive applicator* ** deeper into her vagina, as far back as it will go, and then the barrel is pulled back out for about an inch, thereby creating a pocket deep in the vagina in which the new powder will be blown. The tip on the end of the plastic bottle is firmly placed into the free end of the contraceptive barrel already placed in the vagina. The plastic bottle is shaken or jarred so that the powder in the plastic bottle will fall down to that end of the bottle to which the barrel is attached. The patient presses the sides of the plastic bottle quickly and firmly, 2 to 4 times. This usually fills the vagina almost immediately and excess low pH powder will rush out of the vagina around the inserted contraceptive barrel. By this method there is no danger of blowing powder up and into the external os of the cervix. By holding the fingers of one hand around the barrel as the powder is being blown into the vagina, any loose new low pH powder that is blown out and around the barrel is dusted or rubbed on and into the perineum, between the labia and around the anal region.

This new low pH powder is blown into the vagina every 2 to 5 days when she is not menstruating and 4 to 8 times daily DURING THE MENSTRUAL FLOW. Menstrual blood, pH 7.2 to 7.6 drops to pH 2.0 to 2.5 almost

immediately (within 3 minutes) and all pathogenic micro-organisms are killed immediately due to the immediately drying of all the vaginal walls and then the drop of the pH to 2.0 to 2.5. Enough new pH powder is blown into the vagina to keep the blood during the entire menstrual flow, a grayish color. Any menstrual blood that may escape onto the perineum is covered and rubbed with the new pH powder, changing it into a grayish chemical which is no longer blood. This new chemical or chemicals become like sand that can be easily dusted off. These new formed chemicals are also no longer sticky so will fall off into the commode when she voids or defecates or walks. Menstrual blood is no longer blood, it is now a new chemical or chemicals that shrinks so that little or none of it passes into an internal tampon or out onto the perineum or onto a perineal pad. In most patients with a normal menstrual cycle no internal tampon or external pad is necessary. In those patient who spot for 2 or 3 days and bleed excessive for 2 or 3 days then spot for 2 or 3 days, this new pH powder usually eliminates the patient from ever seeing the menses during the spotting days. If the patient floods, then there may be some menstrual blood that reaches the perineum and then more new pH powder must be blown into the vagina and onto the perineum or a perineal pad must be worn. If an external pad is to be worn, the pad is opened and a liberal amount of the new pH powder is placed between each layer of the pad and then the pad folded back together.

This new pH powder within the external pad stops menstrual odors, absorbs and changes the absorbed blood to a grayish powder, as well as producing a low pH of 2.0 to 2.5 which kills all pathogenic micro-organisms on the perineum and within the menstrual blood in the external pad. Menstrual blood is changed by this new pH powder is odorless and no longer sticky but falls off from the vagina at introitus and between the labia and perineum and will fall out of the pad as she walks or moves about. Bacteria can no longer live in this powder changed chemical made from menstrual blood because the pH is so low, pH 2.0 to 2.5. This new changed chemical from menstrual blood can be left open in a jar in the laboratory for weeks and even months without undergoing deterioration or odors formation.

*Newer and better applicators are being devised which will make the insertion of powder easier.
**Tablets will be on the market soon.

MOST PATIENTS WILL WELCOME THE USE OF THIS POWDER OVER INTERNAL VAGINAL TAMPONS AND EXTERNAL PADS, BECAUSE MANY WILL NO LONGER HAVE TO WITHDRAW A BLOODY INTER-VAGINAL TAMPON DRIPPING WITH BLOOD OR REMOVE FROM THEIR PERINEUM A BLOODY EXTERNAL PAD. MANY PATIENTS WILL NO LONGER EXPERIENCE MENSTRUAL TENSIONS AND PSYCHIC DYSMENORRHEIC PAINS, AND DISCOMFORTS WHEN THEY NO LONGER SEE THEIR MENSTRUAL BLOOD.

The physician can obtain safe, efficient, and prompt results in the treatment of vaginal and cervical infections before and during the menstrual cycle as well as preventing the growth of pathogenic and non-pathogenic micro-organisms during the menstrual flow. Also, female odors between and during the menstrual cycle. Equally good results are obtained after coagulation and conization of the cervix. After these procedures, odors, sloughs, and hemorrhages are eliminated because of the new low pH of 2.0 to 2.5. This pH powder is blown into the vagina immediately after the operation and every 4 days for 3 to 6 times by the physician and nightly by the patient or every other night. If powder burns then patient is using powder too often. No vaginal, introital, or perineal pads are necessary since the pH powder sticks so well in the vagina. One of the remarkable features of this pH powder is that the patient becomes comfortable quickly and any undesirable odor is absorbed immediately.

OTHER USES

POST PARTUM: The pH powder assures prompt relief from odors, irritations, and messy lochia in which pathogenic micro-organisms grow profusely. Alkaline lochia, pH of 7.3 to 8.5 is made to drop to a pH of 2.0 to 2.5, a pH in which no pathogenic micro-organisms can grow.

ODORS FROM CANCER OF UTERUS, CERVIX, VAGINA OR PERINEUM: Blow on and rub in pH powder to affected areas producing odors daily and twice daily, or until the powder begins to burn patient.

ULCER OF CERVIX: Fill vagina with

powder every 4 days for 3 to 6 times or until ulcer of cervix disappears. Patient blows in powder every 5 days for years to prevent recurrence or to destroy ulcer if physician wishes. Thousands of cancers of the cervix could be prevented if all women would blow in this pH powder every 5 days for years, since ulcers of cervix would be eliminated or prevented.

PRURITUS VULVAE AND ANI: Itching of the vulva and anus is relieved almost immediately after the pH powder is blown and rubbed onto the perineum due to its absorbing and soothing properties as well as to its very low pH which destroys pathogenic micro-organisms. Rub on daily.

USED INSTEAD OF DOUCHES: Those who do not wish to take a douche, can blow into the vagina the pH powder, until the vagina is filled, every 2 to 5 days. This powder keeps the vagina highly acid and in a true physiological state, since only the normal Doderlin bacilli can grow at such acid pH. The patient can stand up and blow in this powder and then emptying the powder deep in the vaginal vault. An empty contraceptive barrel is used as an aid in blowing in the powder. These processes eliminate the necessity of lying down to acidify the vagina, producing a normal physiological vagina and to stop female perineal odors. The powder is so sticky that it will not run out of the vagina or leak from the introitus, so no perineal pad need be worn. Those who wish may use a contraceptive applicator and insert one dose or applicator full of the "New low pH Jelly" every 3 to 4 days into her vagina.

pH POWDER ON PUFF FOR FEMALE AND PERINEAL ODORS: Every morning the patient can eliminate quickly and efficiently all female odors by dusting this pH powder onto the perineum, in the pubic hairs and between the labia. If patient is going out for the evening the pH powder can be dusted quickly on the perineum and be free of female odors for 24 hours. Will not burn skin even if used daily or twice daily. Patients who have vaginal, cervical, labial, perineal or anal lesions and those with female odors should have a small box with a powder puff and pH powder in it.

DURING THE MENSTRUAL FLOW: The most important use of this powder is the use

of it during the actual menstrual flow. Millions of pathogenic micro-organisms multiply in menstrual blood since, in the past, all treatments of the cervix and vagina are usually stopped during the menstrual flow. New low pH powder lowers the menstrual blood to a pH of 2.0 to 2.5, a pH in which pathogenic micro-organisms can not grow. Messiness of menstruation can be eliminated.

As soon as the patient feels that menstruation is to start or feels menstrual blood on the labia, she fills the vagina full of pH powder and any excess pH powder that blows back out of the vagina after the vagina has been filled is rubbed or dusted into her pubic hairs and perineum and between the labia. She may pack vagina at introitus by placing large amount of pH powder between open labia and on external pad, then by pressure on pad while separating labia, a sufficient amount of pH powder will be pushed into vagina. The patient blows pH powder into the vagina 4 to 8 times or as many times as it takes to keep the red menstrual blood a grayish color and changes the red menstrual blood into a small amount of fine dry powder that can be easily dusted off while the patient is sitting over the commode. Menstrual blood is changed into other chemicals which are no longer sticky and will fall out of the introitus into the commode when the patient voids or defecates or walks.

The number of days the actual flow is seen is usually reduced by 2 to 3 days when the pH powder is used.

Psychic ill feelings are usually absent when red blood is not seen by the patient or they do not have to wear a sanitary belt, an internal vaginal tampon or external pad during the menstrual flow.

pH POWDER AFTER INTERCOURSE: In those patients who are bothered with recurring leucorrhea, such as *Trichomonas vaginalis*, *Monilia (canidida) albicans*, the patient may blow in the pH powder, filling the vagina immediately following intercourse. She can have the pH powder and contraceptive barrel beside the bed and blow in the pH powder without getting out of bed. The semen is immediately liquified and all vaginal and perineal odors and pathogens are eliminated. No messy secretion will run out

of the vagina onto the perineum after pH powder is blown in. No odor of spermatozoa will be present. Spermatozoa are also killed immediately at pH 2.0 to 2.5.

pH POWDER BEFORE INTERCOURSE: If the pH powder is blown into the vagina just before coitus a pH of 2.0 to 2.5 is produced, a pH at which spermatozoa dies. By actual mixing of pH powder and spermatozoa it was found that at a pH of 3.70 and below no spermatozoa were found. The powder and pH jelly covers the cervix and the entire vaginal walls with a low pH, so low that sperm as well as pathogenic micro-organisms cannot survive. The pH powder and jelly is sticky. It sticks excellently to the vaginal walls and cervix. The powder or jelly does not burn the sexual partner.

AFTER CAUTERIZATION, COAGULATION, AND CONIZATION OF THE CERVIX AFTER RECTAL AND VAGINAL OPERATIONS. Powder is blown in every 3 to 4 days for 3 to 6 times by the physician. No vaginal packing or external pads are necessary since the medication is so sticky and will not run out and mess up the pubic hairs and perineum.

NOTE: NO PATHOGENIC MICRO-ORGANISMS, SUCH AS *TRICHOMONAS VAGINALIS*, *MONILIA (CANIDIDA) ALBICANS*, *H. VAGINALIS*, CAN BECOME CHEMICAL FAST (RESISTANT) TO THIS NEW LOW pH (ACID) POWDER AND JELLY. THIS NEW VERY LOW pH POWDER LOWERS THE pH SO LOW THAT IT BURNS THESE PATHOGENS TO DEATH IMMEDIATELY. PATHOGENIC MICRO-ORGANISMS CAN NO MORE BECOME USED TO THIS POWDER AT THIS LOW pH OF 2.0 TO 2.5 THAN THEY CAN BECOME USED TO HOT BOILING WATER IN THE STERILIZER THAT HAS BEEN BOILING FOR 30 MINUTES.

SUMMARY

A new low pH of 2.0 to 2.5 powder and jelly has been discovered and presented for the treatment and prevention of vaginal and cervical infections and for the destruction of ulcers of the cervix. At this new low pH no pathogenic micro-organism can grow and are killed immediately (within 3 minutes). This applies to *Trichomonas*,

Monilia, and *H. vaginalis*, etc.

The use of the very low pH powder during menstruation is presented because it is during the menstrual flow that treatment is stopped and it is during this time that pathogenic micro-organisms grow and increase to such number that they produce pathogenic conditions. Menstrual blood and serum are ideal bacterial and protozoan culture media. It is essential that the vagina and cervix be treated during the menstrual flow, for better results. This very low pH buffered powder, pH 2.0 to 2.5 has been found ideal for the eliminating of pathogens in the menstrual blood.

New vaginal and cervical adhesives have been discovered in the Research Institute and these new discoveries have been incorporated into this new pH powder and jelly. Now it is possible to have vaginal and cervical medications that will NOT run out of the vagina or leak from the introitus onto the perineum. Messiness has been eliminated.

A new simple method has been found to keep the vagina within its normal physiological pH range. Previously, pH 4.0 to 4.5 medications were placed in the vagina but newer knowledge has shown the author that it is many times better to place buffered, pH 2.0 to 2.5 medications within the vagina.

This was because newer electronic determination of free, total and combined acids and electronic pH (hydrogen ion) studies have shown that vaginal and cervical secretions, especially secretions due to infections are even more highly buffered than previously thought.

A new vaginal powder has been presented that may be used during the menstrual flow to kill pathogenic micro-organisms and to absorb and change menstrual blood to new chemicals and reduce the amount so greatly that the woman may not see her menstrual flow, thereby eliminating emotional reactions that may occur during the menstrual cycle. This new low pH powder is also used after cauterization, coagulation, and conization of the cervix as well as operations on the bladder, cystocele and perineal repairs.

The first time that an ulcer of the cervix can be eliminated by medicinal treatment by the

patient at home is presented. Ulcers of the cervix disappear in 3 to 6 weeks at such low pH range.

Vaginal, cervical and perineal odors can now be easily and efficiently eliminated by simply dusting this new pH powder over the perineum and blowing it into the vaginal vault. This powder has been found useful in preventing the recurrences of *Trichomonas*, *Monilia*, *H. vaginalis*. The patient blows in the powder immediately after coitus and every 5 days for years. All pathogenic micro-organisms ejaculated at coitus are killed by this new low pH.

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The new corrected buffered, acidic spreading agents, carbohydrated powder and jelly is known as pH Powder and Jelly and the new buffered acidic, spreading agent douche is known as pH Douche Powder.

THE *President's* PAGE

GREETINGS TO ALL THE DOCTORS OF THE STATE OF ARIZONA WHOM I DID NOT GREET PERSONALLY AT YUMA.

DOCTOR PODOLSKY'S EDITORIAL 'ARIZONA MEDICINE APRIL 1957' STATED THAT HE LOOKED WITH A JAUNDICED EYE AT ENCROACHMENT OF FEDERAL AND STATE GOVERNMENT INTO MEDICINE. YET PUBLIC LAW 880 PROVIDES MATCHING FEDERAL FUNDS TO THE STATES FOR WELFARE PATIENTS AND DEPENDENT CHILDREN — EFFECTIVE JULY 1, 1957.

YOUR COUNCIL THROUGH MEDICARE OR SOME SIMILAR COMMITTEE WILL HAVE TO ADOPT A FEE SCHEDULE FOR THESE SERVICES BY THAT DATE. SHOULD THESE INCLUDE IN-OFFICE PROCEDURES OR OUT-PATIENT HOSPITAL ONLY? MAKE YOUR DESIRES KNOWN!

I AM IN FAVOR OF A STATE-WIDE FEE SCHEDULE TO BE MODELLED AFTER ONE BY THE WESTERN ORTHOPEDIC SOCIETY. IT HAS A MINIMUM AVERAGE AND MAXIMUM FEE FOR EACH PROCEDURE. THIS SAME SCHEDULE COULD BE DEvised BY THE RELATIVE VALUE UNIT SCHEDULE AND BY SETTING 3 SETS OF VALUES TO EACH UNIT.

I INVITE YOUR SUGGESTIONS AND HELP ON THIS PROBLEM.

C. C. CRAIG, M.D., PRESIDENT
ARIZONA MEDICAL ASSOCIATION

Editorial Page

ARIZONA MEDICINE

Journal of

ARIZONA MEDICAL ASSOCIATION, INC.

VOL. 14

MAY, 1957

NO. 5

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
 2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
 3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
 4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
 5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.
 6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.
 7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.
 8. Illustrations—Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.
 9. Reprints—Reprints must be paid for by the author at established standard rates.
- The Editor is always ready, willing, and happy to help in any way possible.

THE 150TH ANNIVERSARY OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK*

IN THE February number of the New York Journal of Medicine are included several interesting historical papers to mark the Sesquicentennial anniversary of the founding of the Medical Society of the State of New York. New York was not the first of the original thirteen states to form a state medical society, but the Medical Society of the State of New York proved to be more influential than most in providing professional leadership over the long period of its existence. Since its beginning in 1807, this Society has rendered such important service in raising the standards of medical education and practice in this country that it is highly appropriate for Arizona Medicine, the journal of the medical society of the youngest state of the Union, to make suitable acknowledgement of indebtedness to our professional brothers of the Empire State.

To understand the background that led to the organization of the state society in New York, one must review the conditions under which medicine was practiced at that time. In the middle of the 18th century "anyone with sufficient audacity, pretension, or professional inclination could set himself up as a ministrator to the sick." Except for the few physicians educated in Europe, the apprentice system represented the only means of medical instruction. Many practiced without education or apprenticeship, and medical advertisements in contemporary newspapers frequently reported miraculous cures and esoteric methods of treatment.

The first American medical school was founded in 1765 in Philadelphia at the University of Pennsylvania, but the second was established at King's College in New York only three years later. This school granted the first degree of Doctor of Medicine in 1769. During the British occupation of New York in the Revolutionary War, the medical school was discontinued, but was revived in 1792 under the auspices of Columbia College. In the next twenty years

(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

*A Medical Chronicle of New York State by various authors. New York State Journal of Medicine, 1957, 57, 433-636.

only 35 students were graduated from this school. The dissatisfaction of the medical profession in New York City led to a petition to the Legislature in 1807 for the creation of another school. As a result the College of Physicians and Surgeons was established, which after a few years was amalgamated with the medical school of Columbia College. This single medical college combined the better features of both and was able to graduate 799 students by 1838.

In passing, it is of interest to note that New York was the home of the first medical journal of the United States. This was the *Medical Repository* which appeared in 1797. During its twenty-three years of existence, the editors collected the best in medical literature both from at home and abroad.

The earliest colonial legislation for regulation of medical practice was in 1760. This New York Act required physicians wishing to practice to obtain a certificate of examination and approval from one of His Majesty's Council, or the judges of the Supreme Court, or the King's Attorney General, or the Mayor of the City of New York, or by any three or more of these.

This Act was amended in 1792 when certain educational requirements were added. Prospective physicians must spend two years of "attending the practice of a reputable physician, if a graduate of a college; and three years, if not a graduate." Also, he must be examined by the Governor, or the Attorney General, or by the Mayor of New York, or by any two of them, and provided further that they call in three reputable practitioners to assist them with the evaluation and the examination. In a sense, this Act established for the first time a Board of Examiners. After this procedure, a certificate permitting practice was issued. Those who had graduated from a regular medical school were exempt from this examination and licensure.

Various amendments to the Medical Practice Acts were made by the Legislature in 1797, 1801, and 1803. During this period of development, the significant ideas of licensure, educational qualifications and discipline were enunciated. Some of the language of these ideas has come down to us in modern times. One difficult matter not settled in these early acts is where responsibility for regulation of qualifications is finally to rest.

The reaction of physicians to these develop-

ments could be predicted. It was unlikely that the arrangements of having judges and attorneys pass on medical qualifications was entirely satisfactory to medical men, even if physicians assisted or had a major role in assisting the lawyers to judge the fitness of candidates to practice. Obviously from the records, this was a stormy era and one in which the standards of medical education were often flagrantly disregarded.

In the early years of the new century, immigration to the northern and western areas of the state greatly increased and brought in an inundation of self-styled physicians. This condition stimulated the medical profession of Saratoga County in 1806 to call a convention of physicians from neighboring counties for the purpose of adopting measures to obtain an act of incorporation for a medical society for "the suppression of empiricism and the encouragement of regular practitioners." The convention met and "a memorial" was sent to the Legislature. The result was that the Legislature responded favorably by passing the Act of April, 1806, permitting physicians to organize medical societies for the purpose of regulating the practice of medicine in the State. This Act prohibited the practice of medicine without a license and empowered the State Society and the county medical societies to grant licenses to qualified applicants. Within three months, twenty counties had formed medical societies, and before two years had passed, almost every county in the State had its society. The convention of delegates from the county organizations to establish the State Society was held in Albany on February 3, 1807.

Once established and amended slightly from time to time, the Law of 1806 remained in force for eighty-four years until the State Board of Medical Examiners was set up under the Board of Regents of the University of the State of New York in 1889. The first written examinations under this Board were conducted for medical licensure in 1891.

The Society had not been long in existence before it became apparent that some codification of the ethical principles upon which the conduct of medical practice is based would be a valuable asset. No other medical group in the country had ever before attempted such self-imposed restriction of their own conduct. In 1821, the State Medical Society appointed a

Committee to draw up a code of medical ethics in the form of a resolution which was unanimously adopted by the State Society. Twenty-three years later, the newly organized American Medical Association modeled its Code of Ethics upon this set of principles.

During the early years of the Society, a state of chaos prevailed in the field of drugs and medications with no uniformity in their compounding and usage. From 1817-1819, the Society took a leading role in persuading the profession of other states to join in the preparation of a U. S. Pharmacopeia. A strong delegation from New York was sent to a general convention that met in Washington, D. C., in January, 1820. The first edition of the Pharmacopeia was published later on that year.

In the 1830-1840 period, the number of medical schools throughout the country increased so rapidly that there was strong competition for prospective students. This situation resulted in a frightening lowering of standards. The New York Medical Society took the lead in sponsoring the movement aimed at calling a convention of delegates from both medical colleges and regularly organized medical societies throughout the country for the purpose of forming a national medical society to correct these abuses. Meeting in Philadelphia in May, 1847, the convention appointed a committee of seven, four of whom were delegates from the New York Society, to draw up a plan of organization for a National Medical Association. It will be seen that the New York State group exerted a disproportionately large influence in the organization of the American Medical Association.

Other instances of the benevolent influence of the New York Society in the elevation and preservation of standards of medical education and practice could readily be cited, but enough have been listed to reveal its great contribution in these fields. The medical profession of other states, and especially of those states whose medical organizations are of recent date, must pay appropriate tribute to the old stalwarts who bore the brunt of the early battles and through whose efforts so many worthwhile victories were won.

Heartly congratulations and grateful acknowledgements then to the Medical Society of the State of New York on this its 150th anniversary.

H.S.

LETTER TO THE EDITOR

The Editor Arizona Medicine, Phoenix.

Dear Sir:

IT is certainly not our wish to make bad friends among members of the medical profession or editors of medical journals. Nevertheless, when one of our products is mentioned by name in an article in a medical journal, under the authorship of an M.D. — and when the information concerning this product is completely inaccurate, we feel that we would be neglecting our duty to the medical profession as a whole, if we did not try to have the misstatement rectified.

We refer to the article which appeared in the February issue of Arizona Medicine, under the titles "Mycin - Schmycin." This article was by Dr. Robert J. Antos and presented the author's opinion regarding some of the newer antibiotics. Certainly, the doctor is entitled to his own opinion on the matters concerning which he has written. However, when we come to flat statements of fact — or supposed fact, we feel we have to take issue. We refer to the following, which appeared on page 75.

"RISTOCETIN (ABBOTT) — they claim superiority, too, but it's still novobiocin."

First, we may say that we do not claim **anything** as yet for Ristocetin. This antibiotic is still under clinical trial, so that we may evaluate its action and establish in a proper manner what claims we may make eventually, if the antibiotic is marketed. Secondly, novobiocin is derived by fermentation of the *Streptomyces niveus*. Ristocetin is derived from the fermentation of a new species of actinomycetes, *Nocardia lurida*. Ristocetin is an entirely new antibiotic and is not related to novobiocin or any other antibiotic presently available.

It takes a disproportionate amount of truth to counteract a small amount of misinformation. It is certainly not helpful to anyone if the medical readers of your journal are left with the impression that Ristocetin is another tradename for novobiocin. We think we would not be out of place in asking you to print a small correction of this misstatement, so that your readers may be informed of the true facts concerning Ristocetin.

We would certainly appreciate this courtesy, and we hope that you will not resent our bringing this matter to your attention.

Yours sincerely, Brian Lees, M.R.C.P.

The History of Medicine in Arizona

WILLIAM VINCENT WHITMORE, M.D.

(Tucson, 1892-)

DR. WHITMORE was born in Bowdoinham, Maine, April 16, 1862. He is the son of Thomas P. and Esther M. (Given). His father, of English descent, was a native of Maine, while his mother, of Scotch-Irish descent, was a native of New York.

William was next to the youngest of 5 children, 4 of whom — 1 brother and 2 sisters — are still living (1933). In 1880 he entered Nichols Latin School, at Lewiston, Maine, graduating in 1881. Here he made a commendable record, receiving the prize for excellence in Latin and Greek.

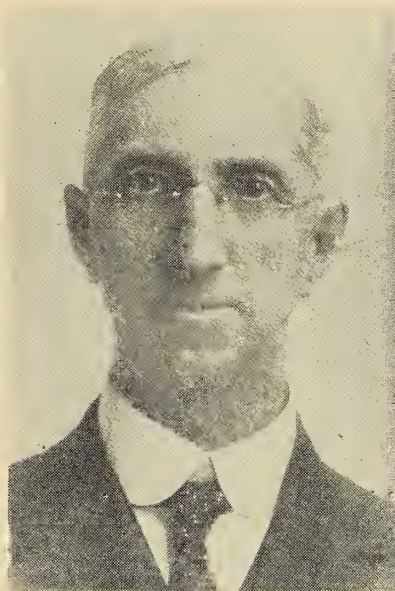
He then entered Bates College. In scholarship during his 4 years there his record was creditable. At his graduation in 1885, with the degree of Bachelor of Arts, he was given an "honor" in Psychology and was one of the Commencement Speakers.

In the fall of 1885 he entered the College of Physicians and Surgeons in New York City — the Medical Department of Columbia University. But one year later he came west, joining his only brother in San Diego County, California. In the fall of 1888 he resumed his medical studies at the Medical Department of the University of Southern California, at Los Angeles, and was graduated April 16, 1890.

UNUSUAL EXPERIENCES

Hospital Internship — During the vacation preceding the senior year at the Medical College, he had been Head Night Nurse at the Los Angeles County Hospital — now the Los Angeles General Hospital. He continued this position for one month after the opening of the Medical College — sleeping Saturdays and Sundays. Then a vacancy occurred in the Internship and he was promoted to that position, serving 6 months before he had received his medical degree.

At the close of his term as Interne at the hospital he practiced medicine at Wilmington, California for one and a half years. In April, 1892 he came to Tucson to be Assistant to Dr. Goodfellow, and until his retirement in 1929, was in constant practice of his profession there.



William Vincent Whitmore, M.D.

Arizona Medical Association — He joined the Arizona Medical Association in 1897 being the second man from Pima County to attend its session. One year later he was elected President of the organization, being now (1933) the earliest President still living.

During the last 30 years he has written more obituaries of his colleagues than any medical man in Arizona. In fact, it has been the wonder of the profession where Dr. Whitmore found so many "nice things" to say about his confreres — living and dead.

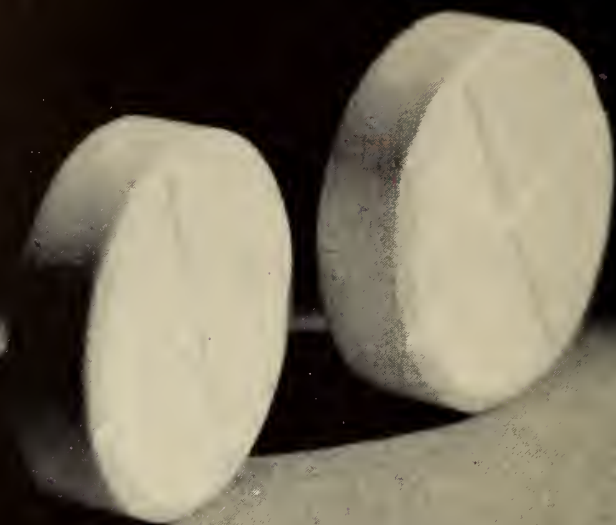
Arizona Board Medical Examiners — For 7 year (1905-1912) he was a member of the Arizona Board Medical Examiners, being President for 3 years. During this period the Board established the reputation of conducting rather rigid — though practical and absolutely fair — examinations.

Other Positions — In 1907-1910 he served as Health Officer of Pima County; and in 1910 was Delegate from the Arizona Medical Association to the American Medical Association at the session held in St. Louis.

SPECIALTY

Dr. Whitmore has preferred to be known as

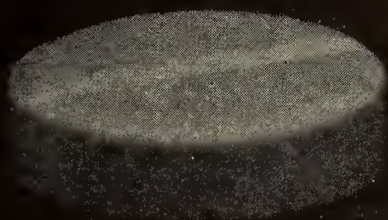
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today**



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at radically reduced dosage**

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PROLONGED ACTION: therapeutic blood levels within the hour, blood concentration peaks within 2 hours—5-10 mg. per cent blood levels persist 24 hours after a single oral dose of 1 Gm.

BROAD-RANGE EFFECTIVENESS: KYNEX is particularly efficient in urinary tract infections due to sulfonamide-sensitive organisms, including *E. coli*, *Aerobacter aerogenes*, *paracolon bacilli*, *streptococci*, *staphylococci*, Gram-negative rods, *diphtheroides* and Gram-positive cocci.

SAFETY: KYNEX offers a margin of clinical safety based on low required dosage, solubility, slow excretion rate. Although KYNEX Sulfamethoxypyridazine is a sulfonamide derivative and the usual precautions regarding such drugs should be observed, the low daily dose of 1.0 Gm. is all that is required for therapeutic blood levels. No increase in dosage is recommended.

CONVENIENCE: The low adult dose of 1 Gm. (2 tablets) per day offers optimal convenience and acceptance to patients.

TABLETS: Each contains 0.5 Gm. (7½ grains) sulfamethoxypyridazine. Bottles of 24 and 100.

SYRUP: Each teaspoonful (5 cc.) contains 250 mg. sulfamethoxypyridazine. Bottle of 4 fl. oz.

*REG. U. S. PAT. OFF.

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the last "general practitioner of medicine" in captivity. However, for 35 years he averaged 100 anesthetics each year; and, during the 3 years that he was County Health Officer, the records, which passed through his hands, revealed the fact that more than one-third of the Birth Certificates recorded in Pima County during that period bore his signature.

Then, his chief diversion was education administration — Tucson School Board 12 years, Regent of U of A 2 years, 1897-98 — 7 years under Hunt beginning 1914.

Domestic Relations — On April 16, 1891 — another birthday anniversary — he was married to Miss Lulu W. Hill. She died in 1898, leaving a son — William V., Jr. — Ripon College, '22. Of the son's 15 months' service overseas, his Major states: "The best known and the bravest man in his regiment."

December 31, 1902, Dr. Whitmore married Miss Opal Le Baron McGaughey — former teacher of the University of Arizona. They have one son, Paul — an Electrical Engineer and Inventor — University of Arizona, '23. He had the distinction of being the youngest student to enroll in the history of the institution.

Since Dr. Whitmore's retirement from the practice of medicine, in 1929, he has devoted considerable time to the preparation of various articles. In the fall of 1931 one of the Tucson papers published a series of articles — 10 in number — "character Sketches of the Presidents of the University." Letters most kind and appreciative were received from several of his "victims". Surprise was expressed at his "accuracy of details" and at his ability to "remember the spirit in which things were done."

From these 10 sketches the University Alumnus published a single, condensed sketch of the Presidents.

His latest work has been to assist Dr. Orville Harry Brown, Editor of the **History of Arizona Medicine**, in securing data concerning many of the deceased medical men of Pima County. About 40 such have been resurrected. Sketches of a few of the most outstanding — and some of these earlier men were outstanding — have appeared in a local paper. Of these the State Historian writes: "These are important contributions indeed to the general as well as the medical history of Arizona."

**EVERY WOMAN
WHO SUFFERS
IN THE
MENOPAUSE
DESERVES
"PREMARIN"**

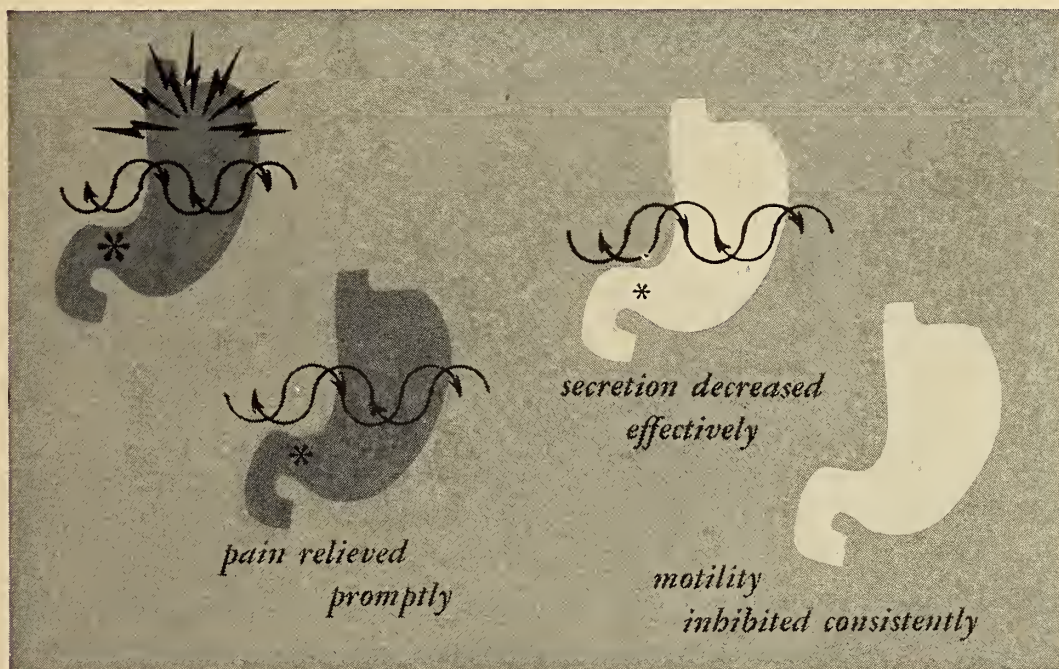
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incidence of side effects was minimal. . . ."

The therapeutic utility and effectiveness of Pro-Banthine in the treatment of peptic ulcer are repeatedly confirmed in the medical literature. Dosage: One tablet with each meal and two tablets at bedtime. G. D. Searle & Co., Chicago 80, Illinois, Research in the Service of Medicine.

*Lichstein, J.; Morehouse, M. G., and Osmon, K. L.: Pro-Banthine in the Treatment of Peptic Ulcer. A Clinical Evaluation with Gastric Secretory, Motility and Gastroscopic Studies. Report of 60 cases, Am. J. M. Sc. 232:156 (Aug.) 1956.

SEARLE

TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M.D.

ALL the internists are dancing in the streets and hallways about the new test for MYOCARDIAL INFARCTION, 'SERUM-GOT'. . . . S-GOT, as it is called, is an enzyme (glutamic-oxalacetic transaminase). It is widely distributed in all body tissues, but especially in heart muscle. The normal for serum is 5 to 33 units per ml. (or cc.). It is tested for by a relatively simple spectrophotometric assay. The serum level leaps upward from two to thirty times normal when infarction occurs, due to an escape of the enzyme from the injured cells. . . . The test is therefore valuable to confirm conventional studies, or as a new means of establishing diagnosis when an unequivocal diagnosis can not be made. . . . It may be elevated in other conditions, including myocarditis, active liver damage, acute pancreatitis, pulmonary and cerebral infarctions, hemolytic crises, surgery and crushing injuries, and dermatomyositis, so that it does not eliminate the need for clinical acumen. . . . It is normal in pericarditis, angina pectoris or coronary insufficiency, infectious diseases, plain rheumatic fever, acute cholecystitis, peptic ulcer, and all types of arthritis. There is no correlation to the WBC count or sed. rate, tho body temperature elevations are parallel. . . . The peak S-GOT values are reached on the first day, averaging 160 units, and drop rapidly to normal by the fifth day. When only ST and T wave changes were present the peak values were 100 units at 30 hours, and normal levels by 60 hours. . . . Ostrow, Ficklin and Evans found 100% correlation in 18 cases which went to autopsy (Med. Annals of the D. of C.). Their graphs show very abrupt and impressive 'steep' curves.

Dr. U. V. Portmann of Tucson has been able to help the editor of 'Queries and Minor Notes', in a recent J.A.M.A., to complete the treatment of SALIVARY FISTULA. He urges radiation, which he has found to be better than radical surgery, and which he has reported several times between 1935 and 1950.

A small series of cases is almost as futile as a single case-report in providing safe conclusions. Gerisch and Moehlig of Detroit reported on the use of METHYL TESTOSTERONE FOR MIGRAINE of women in 1949. They found relief in 88.5% of 35 patients. . . . Moehlig now reports 60 cases, with a longer period of observation, and has found that 81% were relieved. . . . He has changed the dosage from 20 to 10 mg. per day for 4 weeks, followed by 10 mg. every other day for an additional 8 to 16 weeks. Therapy was stop-

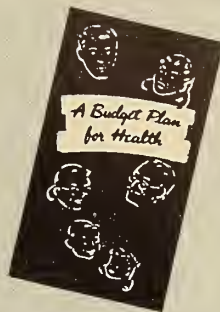
ped if there was no relief by then. Some persons continued every third day for 3 years. . . . If a relapse occurred, as it did in 22%, the drug was again given for 4 to 8 weeks. Relapses were usually very mild, and renewed use of the drug was regularly effective. . . . Eighty per cent had a family history of migraine; 71% had tall family members; 60% had a high-arched palate; 80% had unilateral headaches; 90% had emeses, and all were nauseated with attacks. . . . The Methyl testosterone caused hirsutism in 20%, acne in 45%, voice change in 21%, irregular menses in 48%, increase in weight in 66%, nervousness in 30%, and an increase in libido in 46.6%. (The last-named change was the only one about which patients did not complain).

Medical Economics, a small journal which most of us know, told of a method by which a family could **SELECT AN M.D.** when they move to a new community. It was supposedly described by their former family doctor, — "Ask your neighbors the names of their physicians. Try them out by finding how much time they spend reading medical journals. Cancel off those who don't". . . . The weakness of the plan is how to find out who **DOESN'T** read. . . . I guess we can skip that smart sports jacket, that conservative new car, or that electro-cardiograph. Just carry a couple of medical mags at all times.

Additional information on AGAMMAGLOBULINEMIA becomes available every few months. The basic defect is a deficiency of immunoglobulins, mostly in the gamma globulin fraction of plasma proteins. This is due to inadequate production, since it is logical, and since excessive loss and excessive catabolism have been ruled out. . . . (A secondary type may result from nephrosis, nutritional deficiency, Hodgkin's, multiple myeloma, sarcoidosis, et al). . . . The idiopathic syndrome produces a spontaneous, recurrent, severe infection, usually of bacterial origin, in an otherwise well male or female. It differs from the congenital type in the sex, age, good health, response, etc.

CHEST DISEASES may result from AGAMMAGLOBULINEMIA, and Good and Mazzitello have reported on 8 of their own cases, and a total of 43 reported cases. There were 24 congenital and 19 acquired cases. . . . Four of each group developed bronchiectasis. The exudate in lung lesions shows a typical absence of plasma cells. . . . The respiratory infections included lobar or

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Doctor, Mr. Jones is financing a hospital bill and has asked about including your bill.

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It is true that often the reason a patient has trouble paying you is that he has a number of other medical bills. It is true, too, that people like to group all their obligations in one monthly payment.

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bronchopneumonia, meningitis, otitis media, sinusitis, empyema, lung abscess, atelectasis, and pulmonary fibrosis. Virus diseases did not present a serious problem. . . . Gamma globulin provided help and replacement in children; antibiotics seemed to help many adults.

Dr. Tom Shaffer of the pediatrics department of Ohio State warns us again that hospital staff members may carry strains of **PENICILLIN-RESISTANT STAPHYLOCOCCUS**. ('HOSPITALS', J.A.H.A.). They are a serious hazard to newborn infants. Seven nurses were found to be carriers in a recent outbreak in his hospital. The infections may not develop until after discharge, thus masking evidence of an epidemic. . . . Erythromycin is effective in controlling such strains.

The **SERUM PROTEIN-BOUND IODINE** level, or **PBI**, has moved in to replace the basal metabolism rate (**BMR**) and serum cholesterol test as a diagnostic measure in thyroid problems. . . . The **PBI** is an indication of the circulating thyroxine, and therefore a measure of the metabolic status of the patient. . . . The **B.M.R.** is only a measure of oxygen consumption, and may be affected by any factor which modifies that rate. The **PBI** is **NOT** affected by non-thyroid conditions which increase the **BMR** (essential hypertension, cardiac failure, infectious disease, etc.) and those which decrease it (exhaustion, pituitary dysfunction, sexual neurosis, etc.), as well as conditions in which it is hard to make tests (infancy, apprehension, chorea, Parkinsonism, cerebral injuries, overactivity, etc.).

The **SAFETY OF PATIENTS IN PRESSURIZED COMMERCIAL AIRPLANES** has been mentioned in **ARIZONA MEDICINE** on several occasions since 1948. Dr. L. G. Lederer of Capital Airlines adds a few items in a recent communication. The usual cabin can be pressurized to 8,000 ft. at an altitude of 22,000 ft., and the new 'Viscount' can be kept at 6,000 ft. pressure level. . . . A person with a pneumonectomy can tolerate an altitude of 10,000 feet provided his mediastinum is stable. . . . The old fears were based on lack of pressurizing, the presence of pneumotherapy, and a lack of available oxygen supply.

PHARMACY NOTES. — **NYSTATIN** (Mycostatin) is a drug which has offered promise for monilia and fungus infections. It is now reported as being very effective in the treatment of **MONILIAL VAGINITIS** (Pace and Schantz, J.A.M.A.). . . . There were 59 cases with monilia infections in 76 consecutive cases of vaginitis. Thirty-one were in pregnant women. They were all treated with nystatin tablets per vaginum, and there was no toxicity. All of the pregnant patients, and 98.3% of the entire 59 with monilia, responded. Fourteen patients relapsed in a few weeks after

cessation of treatment, but responded again at once. . . . Seventeen non-monilia infections, 6 of which were trichomonas, had a poor response (2 cases) to Nystatin. . . . Sounds like a good prospect.

Avery of Maryland reports that a single dose of **PROMETHAZINE** (Phenergan HCl) eradicated **PINWORM INFECTION** in 97% of 100 children. This is a new claim for an anti-histamine drug.

Wilson of Denver has found **PHENYLBUTAZONE** (Pyrazolone) to be effective against attacks of **GOUT**. Again, a single dose does the trick (using 400 to 800 mg.) within 4 hours. Smaller doses (100 mg. every 4 hours) controlled the pain within 24 hours, and the joint inflammation in 72 hours.

As the man says, try them if you need to, and keep your eyes open and your fingers crossed.

An Anglo-Saxon medical manuscript has brought our attention to some **INERT DRUGS WITH ODD NAMES**. Most of the materials used about 200 years ago are now found in candy or beverages. . . . "For **LUNG DISEASE**, henbane, mulberry, horehound, betony; boil into an ale and drink at times". . . . "For **HEARTACHE**, take broad-bishopwort, field bishopwort, great-wort, comfrey, sweet-gale, hind-heal, organe, stitchwort, horehound, sage, alehoof, agrimony, cinquefoil, black hellebore, gentian, mugwort, southernwood, pound all together; make an ale". . . . "A **SALVE AGAINST TUMOURS**, — water cucumber, a handful of spearmint, dittany, woodwax, mulberry; boil in malt-ale; squeeze thru a linen cloth; then take the madder, dry it in an oven; grind a handful of red-cabbage seed in a peppermill; boil it altogether, not too hard; use it three times a week, as is most convenient. . . . Who cares for tranquilizers? They never serve them in ale!

You can get gray hair over the action of tyrosinase. The **GRAYING OF HAIR** IS almost always genetically induced, tho it may occasionally be caused by vitamin deficiencies or toxic agents. The basic cause is a loss of the function of tyrosinase, since **COLORATION IS DUE TO THE ENZYMATIC OXIDATION OF TYROSINE IN THE MELANOCYTES**, situated between the germinative cells of the hair. . . . If the melanocytes don't have tyrosinase, you've had it, young or old. All the melanocytes in a hair lose their ability at the same time, so that there are no mid-stages to graying.

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THE OPERATION OF THE COMPACT FOR WESTERN REGIONAL COOPERATION IN HIGHER EDUCATION

BRIEFLY, the essential facts concerning the Western Interstate Commission for Higher Education and the position of Arizona in this organization are these:

1. The Commission is organized under a Compact between most of the western states who have entered into agreements with one another so that qualified students of states that do not possess certain professional schools are enabled to attend such schools in other states at a cost that is approximately the same as the cost to residents of the other state in question. The professional schools involved are those of medicine, dentistry and veterinary medicine.

2. To date, ten of the eleven western states and one territory have joined the Compact: Arizona, California, Colorado, Idaho, Montana, New Mexico, Oregon, Utah, Washington, Wyoming and Alaska.

3. Under the Compact, qualified students from Arizona may be certified by the Commission for: (1) the study of medicine at the University of California (San Francisco and Los Angeles), University of Colorado, University of Oregon, private schools within these states which elect to take part in the program (such as Stanford, U.S.C., etc.); (2) the study of dentistry at the University of California, University of Oregon or the University of Washington in addition to any of the private institutions which elect to take part in the program (such as the College of Physicians and Surgeons and U.S.C.); and (3) the study of veterinary medicine at the University of California, Colorado A and M or Washington State College. Since this is a regional compact, no provisions can be made for study at a professional school outside the Compact area (embracing the states listed above).

4. The number of Arizona students to receive these benefits depends on the number of Arizona students the schools in question can accept and the funds supplied by the Arizona legislature. This number may vary from year to year.

5. The benefits are awarded on an annual basis and a student may receive them for one year or for the entire period he is in profes-

sional school, assuming he remains eligible for the benefits and assuming further that the Arizona legislature continues to appropriate the necessary funds.

6. To be eligible for state aid, an Arizona student must be a citizen of the United States and have been a resident of the state of Arizona for the last ten years or longer.

7. To receive aid, the student must agree to return to Arizona and practice in this state for two years for each year he received state aid or to repay to the state the sums expended in his behalf as specified in paragraph 8 below. If the student does practice in Arizona the specified length of time, his obligation to the state is discharged thereby. If he does not wish to practice here, he may repay all or any portion of the debt not discharged by practice with 4% interest and be relieved of this obligation. (See section 4 of Senate Bill 115 of the Twenty First Legislature).

8. The benefit to the student who accepts aid from the state of Arizona derives from the fact that the state will pay to the school concerned \$2000.00 per year for a medical student, \$1600.00 per year for a dental student and \$1200.00 per year for a student of veterinary medicine. These sums have been agreed upon by members of the Compact as representing a reasonable portion of the cost to the school concerned of educating one student for one year. The money so received is used by the receiving institutions to defray the expense of educating out-of-state students and to increase their instructional facilities so that such students need pay only the fee required of the in-state students of the school in question. Thus, Arizona students attending the University of Colorado Medical School pay approximately the same fees that Colorado residents pay, Arizona students attending the University of Oregon Dental School pay approximately the same fees that Oregon residents pay, etc.

9. At the time of writing, some question remains concerning the benefits Arizona students will receive at private institutions. Since the private institutions do not differentiate between out-of-state students and residents of the state in which they are located, they do not seem to fit into the scheme the Commission has set up for defraying the non-resident tuition. At the present time two private medical schools (Stanford and The College of Medical Evangel-

ists) and two private dental schools (The College of Physicians and Surgeons and The College of Medical Evangelists) have entered the Commission program by arranging a tuition rebate to certified students from Arizona. The amount of rebate varies with the institution. For further information on this point, the student is advised to write the Executive Secretary of the Arizona Commission.

10. The matter of admission to any professional school is entirely in the hands of the professional school concerned. The student who wishes to apply for financial aid must be accepted by the professional school of his choice after making application in the usual way. Since in some cases his application may be affected by his eligibility to participate in the Compact Program, the student should apply to the Arizona Commission for financial assistance under the terms of the Compact **AT THE SAME TIME HE APPLIES TO PROFESSIONAL SCHOOL** for admission.

DIRECTIONS FOR APPLYING FOR ASSISTANCE UNDER THE TERMS OF THE COMPACT

If, after reading the above information, you feel that you are eligible for financial assistance under the Compact and wish to apply for it, you should take the following steps:

1. Apply directly to the professional school of your choice for admission. The matter of admission is administered entirely by the school in question and cannot be determined or influenced by the Commission.

Applications must be in the hands of the professional schools concerned prior to the following deadlines.

- For medical schools. November 15
- For dental schools: December 1
- For veterinary schools: April 1

2. **AT THE SAME TIME**, submit your application for assistance to the Arizona Commission. Your application material must include:

- a. A completed **RESIDENCE AFFIDAVIT** properly signed and notarized.
- b. **TWO COPIES** of an **APPLICATION FOR CERTIFICATION**, properly signed.
- c. Two snapshots to fit the space provided on the application blank. Do not attach to the blank.
- d. A signed white copy of the **CONTRACT**

WITH STUDENT. The pink copy is for your reference and should be retained for your files.

3. Arrangement to have transcripts of all your college work sent directly to the Commission. If you have attended more than one institution of college level, transcripts must be obtained from each such institution. If part of your pre-professional work is in progress at the time this application is made, supplemental transcripts of the uncompleted work should be sent to the Arizona Commission as soon as the work in question is completed.

4. In order to be given full consideration, applications must be received in completed form (together with all supporting material) in the office of the Arizona Commission on or before the following deadlines:

- For medical students: November 15
- For dental students: December 1
- For veterinary students: April 1

Applicants received on or before these deadlines will be given full consideration for certification for the classes beginning the following September.

Late applications will be considered by the Commission if there are uncommitted funds available. The student is urged to meet the deadlines, however, for the Commission will be unable to help him if the funds have been entirely committed or the classes at the professional schools have been filled.

All correspondence with the Arizona Commission should be directed to the Executive Secretary of the Commission at the University of Arizona.

Herbert D. Rhodes
Department of Chemistry
University of Arizona
Tucson, Arizona

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THE CASE AGAINST BIG GOVERNMENT AND ITS POWER TO TAX

L. D. Sprague, M.D.

TAXATION has been the cause of more bloody revolutions in the history of government than any other one provocation. It precipitated our own Revolution which resulted in the founding of the United States of America. We are now in somewhat the same boat as were our founding fathers just prior to 1789. We, the people, must, as they did then, reassert and redefine the constitutional limitations on the functions of government.

The Eisenhower budget is the largest peacetime financial document in our history — \$71.8 billion — and makes sort of a dime store outlay of the new deal and the fair deal. Not indicated in budget expenditures is a large volume of spending which is involved in the so-called trust funds. These expenditures, added to the net budget spending, bring the figure up to about \$83 billion. When F.D.R. was elected to office on an "economy program" he accused former President Hoover of being a "spend-thrift and throwing discretion to the winds". Mr. Hoover was then spending less than \$4 billion a year to run the Federal Government! Within six months after his election Roosevelt changed his course and began an orgy of spending which has continued to this day under both Democratic and Republican administrations.

In the past twenty years the Federal debt has risen from \$22 billion to \$280.8 billion! Interest alone on this huge sum, amounting to \$7.4 billion, requires 10% of the total tax receipts. Senator Byrd, chairman of the Senate Finance Committee, has stated, "It is possible and in fact probable that before this astronomical sum is paid off, if it ever is, the interest charge will exceed the principal." The Federal debt is equivalent to the full value of all the land, all the buildings, all the mines, all the machinery, all the livestock — everything of tangible value in the United States.

In addition to the direct Federal debt, Federal contingent liabilities have increased from practically nothing twenty-five years ago to \$275 billion today. Such contingent liabilities include 2½ million Federal employees costing \$10 billion each year. When we speak of taxation we

think mainly in terms of Federal taxation. The fact is, however, that there are 116,000 governmental units in the United States, 3,000 counties, 16,000 principalities, 17,000 townships and 79,000 school and special districts many of which have the power to and do levy taxes. State and local debts, \$48 billion, a figure apart from Federal indebtedness, are greater than that of any other nation in the world with the exception of Great Britain who has, for all practical purposes, bowed down under the forces of Socialism. Installment purchases are over \$95 billion on homes, \$32 billion on cars and other installment purchases, \$4 billion on department store charge accounts. Eight million American families have pledged up to 40% of their take home pay for things bought on time. All this stretches consumer credit to the point that even a small decline in employment will create havoc. Inventories are estimated at \$81 billion and at this level no manufacturer will long employ labor to increase the quantities of unsold goods in his warehouses. Employment, therefore, must decline in coming months.

The Eisenhower budget of \$71.8 billion for 1958 represents a \$16 billion increase over the average Truman budget of \$55.8 billion. Let's reduce to more easily comprehensive terms what just this \$16 billion increase alone might represent. It would buy, if left in the hands of the American citizen, one million \$16,000 homes, or five and one-third million \$3000 automobiles or, almost \$1000 of goods and services for every living person in the United States!

The above facts should serve to convince any sober thinking individual that the rapidly developing inflation that now threatens to wreck our economy and complete the progressive devaluation of our dollar, is a by product of limitless income taxation and senseless, irresponsible, ever-increasing spending by the Federal Government. The basic cause of this waste of money, your money, is an unreasoned conviction held by all Federal spenders that since there is no limit on their power to tax, there likewise, is no limit to their available source of spendable funds. They have proved this to the tune of \$276 billion in the past twenty-five years. Congressman Ralph Gwinn of New York, states the challenge we face in this way: "The responsible leaders of Congress, Republican and Democratic, realize that Congress would wel-

come constitutional restrictions and limitations because this would give them their best defense against the unreasonable demands made upon them not only by their own constituents but more especially by pressure groups. I feel convinced that few individual Senators or Congressmen can resist the pressures of Socialism and the forces of inflation unless and until the States and the people enact constitutional restrictions and limitations on the Federal Government."

Congress was first given power to levy tax on personal income in 1913. At the time the amendment was considered its sponsors assured skeptics that public opinion would never allow a Congress to levy a tax beyond 10% of a person's income. The Income Tax Amendment places no limitation on the degree of progressive graduation of tax rates (one of the basic principles of Marxism) nor the percentage of income which may be taken. The confiscatory federal income tax rates of the past decade, maximum rate — 92%, illustrate the great progress made toward the destruction of private property and personal freedom. That taxes only apply to the rich can be debunked by noting the fact that 83% of all money collected by the government from personal income taxes is taken from people who make less than \$6,000 yearly. A goodly number of people are irritated by the Income Tax but they do not comprehend how the revenue from this tax has led to the enormous new powers the Federal Government possesses.

The Founding Fathers revolted against such totalitarian rule and wrote a constitution aimed at preventing too much power to be centralized in government. The 16th (Income Tax) Amendment changed all this and opened the door to the very thing which they feared most. One need not look far to see the danger always present when an all powerful government rules the nation. As governments become centralized and consolidate their power, the freedom of the individual is constricted in like amount. Empires and republics have declined for known reasons in the past, excessive taxation and over-centralization. The lessons of human experience cannot be repealed. More and more we are losing control over our own earnings. If the power to tax is the power to destroy, as it certainly is, then what we are witnessing, passively, is the destruction of our freedom.

The former Commissioner of Internal Revenue, T. Coleman Andrews, well summarizes the case against the Income Tax; "Remember, money is power. Your money in your hands is power to you. In the hands of Government, it gives the Government power over you. Governments never use unlimited power for good. They quickly convert it to unlimited power and unlimited power in any government is oppression for all."

The Boston Tea Party is still symbolic. Another revolution is in the making and its rumblings are now beginning to be heard. The American taxpayer is faced with only one recourse — limitation of the powers of Government to tax and spend by submitting to the states for ratification amendments to the Constitution so designed as to accomplish this purpose.

On February 14, 1957 Representative Clare Hoffman of Michigan introduced H.J. Res. 232 for repeal of the 16th Amendment to the Constitution. The resolution has been referred to the House Committee of the Judiciary which has not yet held scheduled hearings. Everyone who has been grumbling about taxes or the Federal budget should get solidly behind the Hoffman Resolution. Many organizations are actively engaged in a campaign to petition the State Legislatures to either vote for repeal of the 16th Amendment or place it on the ballots so that people can vote on it. Other organizations are backing other Senators and Representatives who have introduced measures they feel will combat big government and its power to tax.

The Reed-Dirksen Amendment, eliminates the heavy progressive rate feature from the income tax system to a large extent. It would limit the top rate of income taxes but permit Congress to exceed that limit by a three-fourths vote. It also returns to the States the sole right to tax inheritances and gifts.

The Byrd-Bridges Amendment requires annual balancing of the budget by limiting congressional spending in any fiscal year to the estimated receipts of the Government for that fiscal year with provisions for exceptions in times of dire emergencies.

Senator Murray, Chairman of the Senate Interior and Insular Affairs Committee, has introduced S-325, "to permit the free marketing of newly mined gold," and SJR 16 which would

establish a joint committee to study and investigate the almost non-existent gold mining industry in the United States. How does this enter into the problem? One of the greatest hoaxes ever perpetrated upon the people is the belief built up in the minds of our citizens that "our money is safe because of the gold reserves in Fort Knox." With this propaganda screen we have been led into the greatest inflationary debt binges in history. Prior to 1933 United States currency was fully redeemable in gold. This placed a practical physical limitation upon the power of Government to destroy the value of the dollar by inflationary spending. If too much money was pumped into the economy, citizens could protect themselves by requiring the Treasury to turn their paper dollars into gold. This privilege was denied the American citizen in 1933, and now all the Treasury can give you for paper dollars is more paper. Foreign nations and their citizens, however, can still demand and receive payment in gold for the full amount of their American dollars. Some \$22 billion is stored at Fort Knox and other U. S. storehouses against the contingency that depositors in these foreign countries may decide that our paper dollars are worth less in the market than their established value in gold equivalent. \$14 billion of these foreign balances are now located in this country in the form of short term banking liabilities. Foreign holders of dollars have an additional claim on our gold reserves of about \$8 billion if they choose to convert their dollars. The consequences to the American economy if these obligations had to be suddenly liquidated upon demand by Foreign nations and their citizens can be readily noted in the fact that for practical purposes there is no "gold reserve". It is evident that there is little or no gold at all left in our reserve to back up the billions of dollars in paper currency in the hands of the American citizens. Foreign aid is thus a direct attack upon the value of your dollar, a dollar which is a 50 cent dollar compared to 1939 and one which has been shrinking in value $3\frac{1}{2}$ cents per year for the past 17 years. Remember as the Federal debt goes up the dollar goes down and it's your dollar that is being shrunk out of sight. We have assumed the role of an international busybody with our Foreign Aid programs. Evidence is in abundance that our efforts in this field have done little except make us cordially disliked. Foreign aid

can be cut. Senator Byrd has stated some \$5 billion, others have doubled this figure. If the budget is trimmed the bureaucracy and its propagandists for big government spending would be effectively throttled. Income taxes could be reduced in accordance.

The above represents only a small percentage of the total effort being waged today to limit the powers of Congress to tax and spend and thereby put an end to the enormous bureaucracy which threatens to destroy us all and our way of life. The way to reduce government spending, without disturbing a single necessary function of Government, was provided by the second Commission on Organization of the Executive Branch of the Government, more popularly known as the Hoover Commission. The Commission states that \$155 billion are being wasted on un-needed goods by the military services. Its figures show that the Federal Government is losing approximately \$29 billion a year in business which is in direct competition to private business. The Federal Government is the biggest competitor and threat to our private enterprise system by virtue of which we became the greatest nation on earth. Uncle Sam has some 19,711 commercial type enterprises, \$15 billion invested in commercial-industrial facilities in the Department of defense alone, ranging from shoe repair shops to tree and garden nurseries and from cement plants to sawmills. The Commission stated, "The Government is conducting a multitude of projects in competition with and to the injury of the very system upon which our future security and prosperity are based." It made twenty-two recommendations to the 84th Congress but Congress made no move to implement these recommendations with laws.

The national debt, now some \$280.8 billion could be cut some \$30 billion and perhaps more, at one fell swoop, by sale of all these Federal enterprises. At the same time the taxpayers would be saved some \$500 million per year on interest paid on the debt and some \$3.5 billion yearly appropriations by Congress could be eliminated. Tax income, on the other hand, could be increased by \$2 billion a year. This would mean a net saving to the taxpayer of \$6 billion a year notwithstanding the huge initial saving involved in selling off the enterprises. All this would not disturb a single necessary function of government according to the Commission. An

amendment to the Constitution to get Government out of business is clearly indicated. A proposed 23rd Amendment to the Constitution states that the Government of the United States shall not engage in any business, professional, commercial, financial or industrial enterprise except as specified in the Constitution. The savings provided by such a move would go a long way toward providing the revenue which would allow marked reduction of or even abolition of the income tax.

The proposals to repeal or modify the 16th Amendment have much to warrant serious consideration. One might easily gain the impression from various press gleanings that nobody aside from a few right wing "fanatics" has any desire to do anything about it. It appears that these few right wing fanatics have been joined by THIRTY-TWO of the forty eight state legislatures. The Idaho Legislature became the thirty-second state legislature to endorse a proposed constitutional convention calling for a ceiling on the income tax. Arizona, we are sorry to say, did not see fit to join her thirty-two sisters in their endorsement, perhaps due to the urgent press of other pending legislation and nearness of the end of the session. The legislatures of two-thirds of the states having spoken, Congress must, under Article V of the Constitution, call a convention which will have the power of submitting a formal Amendment to the states for ratification. The States should then overwhelmingly ratify such an Amendment. To do otherwise would, in our opinion, retain a governmental power utterly foreign to the philosophy of our American Constitutional Republic (we are NOT a democracy). It is a proposal to restore to the States the Constitutional powers and rights belonging to them. It will free the people of the United States from the dangers inherent in all strong centralized government which inevitably leads to totalitarianism and loss of individual freedom. If the States were required to tax their people not only for the support of the State government but Federal as well (another possible solution revenue-wise) they certainly would be more reluctant to provide Federal Aid to other States, or to foreign aid programs. The taxpayer would be much better able to make himself heard at the State and local level than he would in Washington. The Federal budget can and should be reduced to a sane level and confiscatory tax-

ation brought to an end. Something must be done to curb the size and power of the Federal Government and its bureaucracy. It appears that the only solution is cutting down on its tax revenue, the source of both its size and power. As one syndicated columnist, puts it, "If the Government would keep its cotton pickin' hands out of my poke, I'd be glad to take care of myself"!

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ARIZONA STATE DEPARTMENT
OF HEALTH'S PROGRAMS
DISEASE REPORTING

Submitted by Jack B. Eason, M.D.
Director of Maternal and Child Health
Arizona State Department of Health

MAKING reports is usually tedious and therefore time consuming. Reports which are evidence of births and deaths are known to be necessary to the individual and to the community. The doctor makes these no matter how time consuming. Many doctors question the justification for taking valuable time from medical services to report the incidence of communicable diseases or unusual conditions for which there are no readily determined etiology. The prevention of spread of certain communicable infections is well accepted. These include smallpox, diphtheria, tetanus, trachoma, tuberculosis, and the venereal afflictions. These must be reported promptly. Reporting such occurrences as mumps, German measles, measles, chicken pox and whooping cough may seem to be a waste of time. These diseases may be factors, however, in the incidence of congenital defects of the infant whose maternal parent suffered one or another of these so-called minor communicable ailments during the first trimester of the pregnancy. It will no doubt in time become important history in each prenatal medical record whether the mother has had certain of these diseases. Bacterial, viral, protozoal or fungus disease of the mother's blood stream at any time in

the course of pregnancy may predispose to premature birth of the infant. It is only when we have all facts documented, assembled and analyzed that the physician can best serve the family, the mother and child in particular. Prevention of some communicable diseases in early childhood may seem to be undesirable. Promotion of good health may require natural immunity to certain diseases for which there are not satisfactory vaccines.

Knowledge that is obtained by disease reporting becomes knowledge useful to survival.

JOINT MEDICO-LEGAL PLAN FOR SCREENING MEDICAL MALPRACTICE CASES

THE FUNDAMENTAL purposes of this plan are two-fold; on the one hand, to prevent where possible the filing in court of actions against physicians and their employees for professional malpractice in situations where the facts do not permit at least a reasonable inference of malpractice; and, on the other hand, to make possible the fair and equitable disposition of such claims against physicians as are, or reasonably may be, well founded.

Both professional groups recognize that the mere filing of a malpractice action in court, however unjustified medically it may be, causes substantial harm to the reputation and practice of the physician concerned. Both groups recognize, at the same time, that persons having legitimate and meritorious grievances against physicians have heretofore often encountered the greatest difficulty in substantiating their claims with expert testimony in court.

The instrumentality hereby jointly created for the purposes outlined above shall be known as the joint Screening Panel of the Pima County Medical Society and Pima County Bar Association, hereafter referred to as the Panel.

II.

COMPOSITION OF THE PANEL

The permanent Panel shall consist of all of the members of the Medico-Legal Committees of the Medical Society and Bar Association; provided, however, that neither the Society or the Association shall be represented by more than ten members on the Panel. The Panel may, by a majority vote of its permanent members, call in one or more other physicians or

attorneys to sit as members of the Panel in consideration of any particular case. Any permanent member of the Panel shall disqualify himself from consideration of any case with which, by virtue of his circumstances or official position, he has or may have any personal or official connection, or as to which he feels that his presence on the Panel is for any reason inappropriate, considering the purposes of the Panel.

III.

CASES SUBMITTED

Any attorney may submit a case for the consideration of the Panel by addressing a request, in writing, signed by both himself and his client, to the Chairman of the Medico-Legal Committee of the Bar Association. This letter request shall contain the following:

1. A brief statement of the facts of the case, showing the persons involved, the dates, and the circumstances, so far as they are known, of the alleged act or acts of malpractice.

2. A statement authorizing the Panel, through its Chairman, to obtain access to all medical and hospital records and information pertaining to the incident and, for the purposes of its consideration of the matter only, waiving his client's privilege as to the contents of those records. Nothing in that statement shall in any way be construed as waiving that privilege for any other purpose or in any other context, in or out of court.

3. An agreement that the deliberations and discussions of the Panel and of any member of the Panel in its deliberation of the case will be confidential within the Panel and privileged as to any other person, and that no Panel member will be asked in any action to testify concerning the deliberations, discussion and internal proceedings of the Panel.

4. A request that the Panel consider the merits of the claim and render its report to him.

5. A statement that the attorney has read, understands and subscribes to the plan for screening medical malpractice cases and has advised his client thereof and that the client agrees to the submission of the facts pursuant to the plan.

Cases which the Panel will consider shall include all cases involving any alleged act of professional negligence occurring in Pima County, Arizona, by a member of the Society, his servants, agents, or employees.

IV.

PROCEDURE BEFORE THE PANEL

Requests for review submitted to the Chairman of the Medico-Legal Committee of the Bar Association shall be brought before the next regularly-scheduled monthly meeting of the Joint Medico-Legal Committee of the Medical Society and Bar Association. At that time the Joint Committee, sitting as the permanent members of the Panel, shall determine what, if any, additional physicians or attorneys shall be called to sit in review of each case, and a date and time shall be set for the Panel's hearing of and consultation on each case. In no instance shall the date assigned be more than forty-five days after the receipt by the Chairman of the Medico-Legal Committee of the Bar Association of the request for review. In any hearing of any case brought before the Panel for review a quorum of the Panel for the purpose of deciding the issues submitted to it, shall consist of a majority of those permanent members of the Panel who have sat on all hearings of the issues.

At the time set for hearing of the case the attorney submitting it for review shall be present and shall state his case, including a resume of the facts constituting alleged professional negligence which he is prepared to prove. The physician or physicians against whom the claim is brought may be present and may make a statement of his or their case. The monetary damages in any case, if there are any, shall not be subject of inquiry or discussion. The hearing will take the form of an informal discussion, and no official record shall be kept. When the parties present have been heard the Panel may take the case under advisement or it may request that additional facts, records or other information be obtained and presented to it at a supplemental hearing, which shall be set for a date and time certain, not longer than 15 days from the date of the original hearing unless the attorney bringing the matter for review shall in writing consent to a longer period. Any second hearing shall be held in the same manner as the original hearing, and the attorney and physician concerned may be present.

Each case shall be taken under advisement by the Panel which shall consider all of the relevant material made available to it at the hearings or otherwise, in the form of statements

or records. The Panel shall consider only whether, in the light of the material presented, there is a reasonable possibility that the acts complained of constitute professional negligence, and whether there is a reasonable medical probability that the claimant was injured thereby. The Panel shall make no effort to resolve disputed questions of fact except to determine whether in its judgment there is any substantial evidence to support the facts alleged by the claimant. The Panel shall make no findings respecting the quantum of damages in the case, if any there are.

The Panel shall not make any effort to settle or compromise any claim, or express any opinion on the monetary value of any claim. All votes of the Panel on any such question before it will be by secret ballot. All decisions shall be taken by a majority vote of those permanent members of the Panel present who have sat on all hearings of the issue.

Its answers to these questions shall be submitted in writing, to the attorney bringing the matter for review, and, if he or his representative has appeared before it, the physician concerned. A copy of each report shall be retained in the permanent files of the Panel. The deliberations of the Panel shall be and remain secret. The written opinion shall in every case be signed for the Panel by its elected chairman, and shall contain only the conclusions reached by a majority of its members, except that any Panel member may request in writing that his dissent from the conclusions of the Panel be noted in the official records of the Panel, and may, at his election, append to the written report submitted to the parties concerned his own written dissenting opinion. The opinion reached in any case shall be treated in every respect as confidential between the Panel and its members on the one hand and the persons directly concerned in the case on the other.

In any case where the Panel has determined that the acts complained of were or reasonably might be professional negligence and that the claimant was or reasonably may have been injured thereby, the Panel, its members and the Medical Society will cooperate fully with the claimant in retaining a physician or physicians qualified in the field of medicine involved, who will consult with and testify on behalf of the claimant, upon his payment of a reasonable fee, to the same effect as if the said physician or

physicians had been employed originally by the claimant. In a case where the Panel has determined that there is no reasonable possibility that the acts complained of constituted professional negligence and/or no reasonable medical probability that the claimant was injured thereby, the attorney bringing the matter for review shall therefore refrain from filing any court action based upon it unless personally satisfied that strong and overriding reasons compel such action to be taken in the interest of his client, and that it is not done to harass or gain unfair advantage in negotiation for settlement. It is not intended that the submission of any case to the Panel shall be considered

as a waiver by the attorney or his client of their ultimate right to decide for themselves whether the case shall be filed. However, any attorney who brings a case before the Panel shall weigh its conclusions in the greatest professional good faith.

EDITORS NOTE: This is a plan submitted by the Joint Medical Legal Committee of Pima County for the screening of medical malpractice cases. It represents a proposal under consideration but not passed. However, it incorporates a group of thoughts worthy of consideration by the various component medical societies of the State and the State Organization.

BLUE CROSS-BLUE SHIELD



Pictured are Dr. Frank Edel, Phoenix, Col. Earl C. Lowry, Medical Corps, Washington, D.C., Dr. Carlos Craig, Phoenix, all seated, and Robert Carpenter, executive secretary, Arizona Medical Association, and L. Donald Lau, executive director, Arizona Blue Cross-

Blue Shield. Occasion was a meeting of Arizona Medical Association representatives and Blue Shield officials to discuss the Dependents' Medical Care program, better known as Medicare with Col. Lowry who is Deputy Executive Director of the program.

NEW VA POLICY STATEMENT

THE COUNCIL on Medical Service and its Committee on Federal Medical Services recommended to the House of Delegates this winter a revision and clarification of the A.M.A. policy statement on V.A. medical care for non-service-connected disabilities.

The following reference committee statement, presented at Seattle on November 29, 1956, was adopted by the House:

"Your committee feels that the suggested revision of the A.M.A. policy on veterans care deserves consideration.

"With respect to the provision of medical care and hospitalization benefits for veterans in Vet-

erans Administration and other federal hospitals that new legislation be enacted limiting such care to veterans with peacetime or wartime service whose disabilities or diseases are service-incurred or aggravated.

"Your committee recognizes that the change suggested by the Council on Medical Service is in line with past expressions of the American Medical Association and endorses in principle the paragraph as quoted above. Your Committee recognizes the laws and administrative extensions of the law that are now in operation. It feels that under the circumstances it will be to the best interests of the public in general, and veterans in particular, if medical societies, county and state as well as national, develop committees to assist in guaranteeing Veterans Administration hospital admission to service-connected cases.

"While the present law exists, we should help assure that veterans whose illness constitutes economic disaster will not be displaced by those suffering short-term remediable ills that, at the worst, constitute financial inconvenience."

The House's second recommendation, also, falls within the sphere of the local physician. Who knows better whether a veteran's illness will break him financially or merely inconvenience him and who knows better what local facilities can do?

VETERANS ADMINISTRATION HOSPITAL

7th Street and Indian School Road

VETERANS are eligible for outpatient treatment at Government expense only for those disabilities which have been adjudicated as service connected by the Veterans Administration. The only exceptions are Spanish American War Veterans who may be furnished outpatient treatment for any disability, and veterans who are in training for vocational rehabilitation under the provisions of Public Law 16 or Public Law 894 and are in need of treatment to prevent interruption of this training.

Treatment of such veterans by private physicians may be authorized only when treatment at a VA facility is not feasible. In such cases, the veteran himself or his physician may request the necessary authorization. Such requests

should be addressed to Chief, Outpatient Service, VA Hospital, Phoenix, Arizona. If the veteran's condition is not emergent, he should be informed that treatment cannot be rendered until authorization has been received from the Veterans Administration. If the applicant's condition is emergent, you may render treatment and then immediately request authority for treatment by telephone (AM 6-2471 Ext. 261 between 8:00 A.M. and 4:30 P.M.) on that date or on the first working day following, or, by mail on your own letterhead stationery. All inquiries regarding other phases of outpatient care, such as physiotherapy, home nursing care, ambulance service etc. should be addressed as indicated above. In case of a medical emergency, collect telephone calls are accepted.

Hospital treatment in a VA hospital may be furnished veterans for service connected disabilities and also for non-service connected disabilities when a bed is available and when the veteran is unable to pay his private medical and hospital care. When no medical emergency exists, the application for hospitalization should usually be referred to the Veterans Hospital at Phoenix or may be referred to the Veterans Hospital nearest to the veteran's place of residence. In cases where immediate hospitalization is required, the nearest Veterans Hospital should be contacted by telephone.

Summaries of veteran's medical histories will be furnished to private physicians upon receipt of requests signed by the veteran. The subject of prescriptions is fully discussed in the "Instructions to Designated Physicians". Copies of these instructions will be furnished to any physician upon request.

M. J. WOLLENMAN, M.D.
Chief, Outpatient Service

ABILITY TO PAY FOR VA CARE (Court Decision)

THE LAW authorizing non-service-connected care states that the veteran's statement under oath of inability to pay for hospitalization shall be considered sufficient evidence. For some twenty years, this has been taken to mean that, once a veteran has signed the statement that he is unable to pay, he is eligible for care as soon as a bed vacancy occurs; regardless of his income or net worth, the enabling

legislation FOR V.A. CARE does not provide for questioning his statement.

In recent years, an addendum has been added to the Form 10-P-10, the application for admission to V.A. hospitals, on which the veterans list their assets and liabilities. Since this is a factual, checkable statement, a veteran can be prosecuted for perjury if he makes a false statement in this addendum. However, the addendum itself does not affect the validity of the statement of inability to pay. A veteran could, for instance, state an income of half a million dollars and still sign with statement of inability to pay without breaking the V.A. enabling acts.

In theory, regardless of the amount of a veteran's income, the decision as to ability to pay was still a matter of his own opinion.

This winter, however, John Petrick, a veteran of World War I, was brought before a United States District Court on charges that he falsely stated he was unable to pay for non-service-connected care at the Wichita V.A. Hospital. Mr. Petrick was reported to have admitted holding property and cash worth over \$50,000 and to have a larger than average monthly income from farming. According to reports based on the court records, Mr. Petrick did not perjure himself in his statement of assets and liabilities, but listed them all in sufficient detail that it would be apparent he could afford private treatment for his acute illness.

Since Mr. Petrick did not, apparently, perjure himself in his financial statement and since V.A. legislation would prohibit V.A. authorities from questioning his eligibility, on what basis was he tried? There is an act in our laws (U.S.C. 31, Sec. 231) covering "Liability of persons making false claims" against the government. Anyone not in the armed forces who knowingly makes a false statement in order to obtain payment of a claim against the government and is so convicted must pay the government \$2,000 plus double the amount of damages sustained by the United States as a result of the claim.

The Federal judge hearing the case ruled that Mr. Petrick knowingly made a "false, fictitious and fraudulent" claim against the government for the medical and hospital care received from the V.A., on the basis that his statement of assets clearly indicated the falsity of his statement that he was unable to pay for hospital care. At last report, the fine had not yet been

set, but was expected to amount to the \$2,000 plus twice the cost of the hospital and medical care received.

The only question remaining is: Why has it taken some twenty years of V.A. care of non-service-connected ailments for this statute to be applied to a fraudulent statement of inability to pay?

INDIGENT MEDICAL CARE

THE AMENDMENTS to the Social Security Act passed in 1956 provide, among other items, for a change in the method of financing Federally-aided medical care for the indigent. As of July 1, 1957, any vendor payments (to physicians, hospitals, etc.) for medical care of Public Assistance clients come under a new matching formula: the Federal government will reimburse the states for half their expenditures, up to an average of \$6 per adult and \$3 per child state expenditure per month.

The amendments require coverage of all clients of a particular program, and equal benefits for all clients within a program. Although not strictly a Federal medical program, this new method of reimbursement seems likely to spark renewed interest in medical care for the indigent on the part of state legislatures. The Council on Medical Service's Committee on Indigent Care has prepared a question-and-answer study of the new amendments, which has been sent to all state medical associations, and will be glad to receive any questions from the states concerning this Act.

INDIAN HEALTH PROGRAMS

A RECENT survey by the Public Health Service again emphasizes the problem of Indian health; this segment of our population still has a health record better suited to 1857 than 1957. According to the survey, the average age at death for Indians is 39 (23 years less than the general population); 65 Indian infants out of every 100 live births die in the first year of life (about 2½ times the general average). Indian death rates from diarrheal diseases are eleven times the national average, from tuberculosis five times the national average, and from pneumonia and influenza three times the national average.

The Indian Health Division of the Public

Health Service proposes a cooperative five-year program to improve Indian sanitary facilities with Federal aid at a cost of some \$29 million; it has also requested appropriations to improve hospitals and curative facilities and to expand public health services.

A noteworthy part of the projected program is a plan to train more Indians as professional assistants in the health sciences. There appears to be already an active interest among the Indian tribal councils in improvement of health conditions; reports indicate that current utilization of Indians trained as medical and dental assistants and sanitarians has helped build up local interest in health needs.

The Public Health service has requested, for 1958, \$43 million for Indian Health, an increase of \$5 million over 1957, to augment work on this problem. Some 370,000 Indians receive care through Public Health Service programs.

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HEALTH BILLS INTRODUCED IN CONGRESS

NATIONAL legislators have not held back on the sponsoring of many health and medical bills. They cover just about every phase of medicine and human welfare. Most of them, of course, never get past committees. But as an indicator of the growing interest in health

legislation these figures on bills introduced are illuminating:

250 measures, 1951-1952, 82nd Congress.

407 measures, 1953-1954, 83rd Congress.

571 measures, 1955-1956, 84th Congress.

POTENTIAL BENEFICIARIES OF FEDERAL MEDICINE

SOME of the greatest activity in the health field has involved laws and amendments to laws that widen the scope of medical care for federal beneficiaries. The very latest is Medciare voted last year for military dependents. Today nearly one out of every four persons, including over 22 million veterans, is eligible to receive at no cost to them some degree of medical care from the Federal Government.

22,599,000 living veterans as of January 1, 1957.

5,200,000 military personnel and their dependents.

300,000 beneficiaries of the Public Health Service, including 200,000 seamen, but excluding beneficiaries of Federal Employees' Compensation Act and Indians.

5,100,000 public assistance recipients.

370,000 Indians and Alaskan natives receiving care in 56 federal hospitals or in private facilities under contract.

4,000,000 beneficiaries of the Federal Bureau of Employees' Compensation Act (at-work injuries only).

48,627 PHS hospital admissions in 16 hospitals in 1956.

1,042,000 out-patient visits in 121 PHS out-patient facilities during 1956.

Foreign Economic Aid Programs (entirely U.S.) and the World Health Organization (U. S. largest contributor) give limited health care in 92 foreign countries. Example: 25,300,000 children were vaccinated in 1956.

7,000,000 federal employees and their dependents (will be eligible for health care if proposed legislation is enacted).

FEDERAL HEALTH SPENDING

UNDER the impetus of new legislation enacted during the last few years and particularly the new emphasis on medical research — the federal health budget is rising steadily. Bills introduced in the present (85th) Congress seek to expand many existing programs or set up new ones. The following table gives the total federal

health bill for the current and last fiscal year and a breakdown of health-spending for the top three departments of government.

| | Fiscal 1957 | Fiscal 1956 | Increase |
|--------------------------------|-----------------|-----------------|----------|
| Total, all agencies' Veterans' | \$2,558,719,168 | \$2,268,826,576 | 12.8% |
| Adm. | 825,024,300 | 790,185,800 | 4.4% |
| Dept. of Defense | 790,105,000 | 818,104,500 | |
| Dept. of HEW. | 772,661,800 | 526,935,400 | 46.6% |

SOCIAL SECURITY

OF all the programs of government enacted in the last several decades, none has had greater impact on the population or has been subject to more liberalizing amendments than the Social Security Act of 1935. It began on a relatively modest scale, with retirement payments of up to \$10 a month for wage-earners who reached age 65. At that time, there were no benefits for the surviving spouse and children.

Now, 22 years later, the law has been amended to include: (1) survivorship benefits, (2) maximum monthly family survivorship payments as high as \$200, and (3) a program enacted in 1956 and effective this July 1 for payment of social security benefits to disabled workers at age 50. Efforts continue to be made to amend the law, including a program of free hospitalization of the aged, disability benefits at all ages, and compulsory national health insurance. Statistics on the program as it exists today:

9,250,000 persons received OASI monthly checks in January, 1957.

70,000,000 wage-earners are covered and being taxed; 9 out of 10 persons in the U.S. are primarily "insured" or are their beneficiaries.

\$22,519,000,000 in U. S. bonds in OASI Trust Fund.

Payments from the OASI Trust Fund and contributions to it are now about equal.

Tax rate is 2¼% for employees & employers (4½% total); 3¾% for self-employed.

Under present law, 1975 rate will be 4¼% for employees & employers (8½% total); 6¾% for self-employed.

Under a 1956 law, permanently and totally disabled persons aged 50-65 can get payments equal to retirement payments.

Over 1,000,000 inquiries already have been made for disability payments or "disability freeze"; about one-half of the more than half a million formal applications have been approved.

DR. E. A. GRAHAM DIES AT 73

DR. EVARTS A. GRAHAM, 73, who received the A.M.A. Distinguished Service Award in 1950 for his pioneer work in lung surgery for cancer, died at Barnes hospital in St. Louis on Monday, March 4. Ironically, his death was due to cancer of the lung. The diagnosis was confirmed six weeks ago.

The internationally known pioneer in chest surgery received many honors during his lifetime. He served as president of the American College of Surgeons, 1940-41, and was chairman of its Board of Regents from 1951 to 1954. He was also one of the founders of the American Board of Surgery. From 1920 to 1945 he served as co-editor of the A.M.A. Archives of Surgery.

During the past several years, Dr. Graham was a strong exponent of a link between cigaret smoking and lung cancer. He himself was a chain-smoker at one time, but gave up smoking 10 years ago.

DR. SEALE HARRIS DIES AT 87

DR. SEALE HARRIS, who received the A.M.A. Distinguished Service Award in 1949 for his research on hyperinsulinism and its control, died at his home in Birmingham, Ala., on March 18. He was 87.

Dr. Harris, an international figure in medicine, edited "War Medicine" in Paris during World War I and later was cited by General Pershing "for conspicuous and meritorious service in France." He received many awards during his lifetime, including a citation from the Medical Association of Alabama.

A year after the discovery of insulin, Dr. Harris spent a week in Toronto with Banting, Best, Collip, and McLeod studying many cases and witnessing insulin reactions. These observations led him to recognition of the effects in nondiabetic patients of excessive secretion of insulin.

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and now available as **NEW**

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1.0 mg. prednisolone, 10 mg. hydroxyzine hydrochloride, in orchid, scored tablets. Bottles of 100.

advantages: (1) greater flexibility of dosage
(2) effective tranquilization permits lower corticoid dosage

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T CIVIL DEFENSE

THE BOARD of Trustees recently authorized the A.M.A. Council on National Defense to go ahead with a research project, proposed by the Federal Civil Defense Administration, to study the best method of providing medical care to the surviving population — casualty and non-casualty — in the event of an enemy attack.

Planning for such an exhaustive study is now underway, and Council Secretary Frank W. Barton estimates the project will require 12 to 15 months to complete. The cost, estimated at \$150,000, will be financed by the Federal Civil Defense Administration.

The Trustees looked with favor on the study because they felt that physicians would carry the primary burden and final responsibility for providing medical care for the American people in the event of an all-out war or national emergency.

In explaining the project to the Board, Mr. Barton said that a special committee, under the direction of the Council, will be responsible for the establishment, planning and direction of the study. Membership will consist of two members of the Council on National Defense, two from the Council on Medical Service, and two physicians, who will be selected from the geographical area in which a field study will be made. Representatives of the Federal Civil Defense Administration, U. S. Public Health Service and national health and medical organizations will assist the six-member committee.

The committee members will be named early in April during the regular meetings of the Council on National Defense and the Council on Medical Service. The committee will then meet with Civil Defense Administration officials in Battle Creek for briefing purposes and also to select the metropolitan area to be studied. Later, the state and local medical societies in that area will be asked to name two local physicians who will also serve on the committee.

As an example of medical and health problems associated with an enemy attack, Mr. Barton cited "Operation Alert 1956" which involved a mythical attack last July on Washington, D.C. and 45 of 70 critical civilian target areas. As a part of the test, the President and key government officials and agencies set up distant relocation headquarters.

As a result of this selected attack pattern

there were 25 million casualties of which about 19 million died by the 60th day. In addition there was a minimum of 40 million displaced persons. There were 32,650 casualties among physicians and 55,630 among nurses. The loss of acute general beds was 37,300 and 123,900 were radioactive; the loss of long-term beds was 14,400 and 35,100 were radioactive.

The potential loss of professional health personnel and facilities is tremendous. Approximately 60 per cent of such personnel live in the 70 critical target areas. There are 5,436 general hospitals in the United States; 3,466 are less than 100 beds and contain 146,153 beds; 1,955 are more than 100 beds and contain 539,502 beds. The majority of the latter are in the metropolitan target areas.

TEN CANCER FILMS FOR PHYSICIANS

THIS series of 10 kinescopic films was originally telecast live and in color as part of a medical education program sponsored by the American Cancer Society and the Columbia Broadcasting System. They originated from the Frances Delafield Hospital and Memorial Center for Cancer and Allied Diseases in New York City.

These films are now available without cost to professional audiences throughout the State. They will be shipped post paid anywhere in Arizona. Bookings should be made through the Arizona Division, American Cancer Society at 1429 North First St., Phoenix, Arizona. ALpine 4-7192.

A summary of each program has been written, and will be furnished free if the Cancer Society is given notification and the approximate number of people expected to attend. If requested, a motion picture sound projector and screen can also be made available without charge.

The films available at present are:

Lymphomas and Leukemias, 16 mm. in color, sound; 55 minutes.

Moles and Melanomas, 16 mm. in color, sound; 49 minutes.

Kinescope Promotional Trailer, 16 mm. in color, sound; 5 minutes.

Differential Diagnosis of Uterine Bleeding, 16 mm., color, sound; 45 minutes.

Chemotherapy; A Research Frontier, 16 mm., color, sound; 44 minutes.

Tumors of the Bone, 16 mm., color, sound; 49 minutes.

Cancer of the Cervix, 16 mm., color, sound; 47 minutes.

The Diagnosis of Breast Cancer, 16 mm., color, sound; 45 minutes.

Cancer Detection, 16 mm., color, sound; 38 minutes.

Tumors of Childhood, 16 mm., color, sound; 44 minutes.

Hormonal and Chemical Treatment of Cancer, 16 mm., color, sound; 52 minutes.

BUSINESS MANAGEMENT IN MEDICAL PRACTICE

A SERIES of 10 film presentations dramatizing the business problems of starting a new practice is now being released by Mead Johnson & Company for showing to medical students, interns, and residents.

Entitled "Business Management in Medical Practice," the copyrighted series consists of the films with accompanying commentaries by specially trained Mead Johnson representatives. Showings will be available to medical teaching centers and hospitals.

The first film, "Where Should I Practice?" was released April 1.

The second and third films, "Financing the New Practice" and "Solo, Partnership, or Group Practice?" will be released about July 1.

Other films in the series, which will be released individually at appropriate intervals:

"How to Establish Proper Fees and Promote Collection."

"How Much Liability, Property and Health and Accident Insurance Do I Need?"

"Doctor-Patient Relations . . . Public Relations."

"Personnel Selection and Training."

"A Personal Life Insurance and Basic Estate Program."

"Office Layout and Design."

PRINT FAMILY HEALTH RECORD BOOKLETS

THE A.M.A. Board of Trustees has authorized preparation of a Family Health Record. It is planned to have this attractive, 12-page booklet distributed through state medical societies. The booklet will serve as a repository for pertinent medical information on each member of a family. Full distribution plans will be announced shortly.

LOCATION OPPORTUNITIES

ASHFORK — Pop. 700 — North centrally located — Railroad center — Contact the Women's Club, Ashfork, Arizona.

BENSON — Excellent opportunity for GP — This St. David-Benson trade area has about 5000 population with only one doctor available. Contact Mrs. Thomas Allen, Secretary, Benson Business Association, Benson, Arizona.

CAMP VERDE — Located in the heart of a large farming and ranching area on the Verde River. Approximately 100 miles north of Phoenix. Badly in need of a medical doctor. Contact Ivy N. Moser, R. N., Camp Verde, Arizona.

GILA BEND — Pop. 2,500 — 80 miles west of Phoenix — Nearest town to the Painted Rock Dam Project — Good opportunity for general practitioner. Cattle, cotton and general farming. Office and equipment available. \$150 monthly income from Board of Supervisors. Contact Mrs. J. F. Allison, Box 485, Gila Bend, Arizona.

LAS CRUCES, NEW MEXICO — In South Central part of State and not too distant from El Paso, Texas. Population is approximately 22,000, boasts State College and White Sands proving grounds. General Hospital, 85 beds, fully accredited and staffed by fourteen (14) doctors. Need Urologist, Anesthesiologist and Obstetrician-Gynecologist. For full details write: A. M. Babey, M.D., President of the Staff, 250 West Court Street, Las Cruces, New Mexico.

MORENCI — Mining community located near New Mexico-Arizona border — Pop. 10,000. Has vacancy at hospital for GP. Contact Carl H. Gans, M.D., Morenci Hospital, Morenci, Arizona.

PAYSON — Pop. 1,800 — Have completed and equipped a new clinic. Are badly in need of a medical doctor and the closest medical facilities are 80 miles away. For further information contact Mr. Walter Surrent, President, Payson Clinic, Payson, Arizona.

TUCSON — The V.A. Hospital has two vacancies at the present time — one is for an internist on the Medical Service and the other is for either a general or thoracic surgeon. State license is necessary, but not necessarily an Arizona license. Contact S. Netzer, M.D., Director, Professional Service, V.A. Hospital, Tucson, Arizona.

TUCSON — Opening for a board certified or board eligible Orthopedist to form and

head in Orthopedic Department in the Tucson Clinic. Must have had good training in pediatric orthopedics as well as acute trauma and reconstructive work. Are looking for a younger man; however, are willing to consider any well-trained physician regardless of age. If interested, contact D. J. Heim, M.D., The Tucson Clinic, 116 North Tucson Boulevard, Tucson, Arizona.

YOUNGSTOWN — Pop. 130 — Located 16 miles from Phoenix, 4 miles from Peoria, 1½ miles from El Mirage, 1 mile from Surprise, each a potential field of practice. Most residents are 60 years of age or older and are in need of medical care. Office space is currently provided at no rental. A medical center is being planned. Interested doctors may contact Mr. Sid Lambert, Box 61, Marionette, Arizona.

YUMA — Pop. 15,000 — Situated in the Southwest corner of the State on the Colorado River — Semi-retired medical doctor, possibly a GP, may work part time or full time. He may do his own surgical procedures or may call upon local surgeons to do surgical procedures. If he would wish, he may be director of the Yuma County Health Unit which is an administrative position. Now paying \$6,600 annually for a permanent part time physician. However, it could be revised upward considerably if he would handle his own surgery and the health unit. If interested, contact Mr. R. L. Odom, P. O. Box 1112, Yuma, Arizona.

FOR INFORMATION ON OPPORTUNITIES IN THE FIELD OF INDUSTRIAL MEDICINE, CONTACT:

Harold J. Mills, M.D., Phelps Dodge Hospital, Ajo, Arizona.

Carl H. Gans, M.D., Phelps Dodge Hospital, Morenci, Arizona.

Ira E. Harris, M.D., Miami-Inspiration Hospital, Miami, Arizona.

Charles B. Huestis, M.D., Box 928, Hayden, Arizona.

Elvie B. Jolley, M.D., Copper Queen Hospital, Bisbee, Arizona.

H. W. Finke, M.D., Magma Copper Company Hospital, Superior, Arizona

John Edmonds, M.D., Kennicott Copper Corporation Hospital, Ray, Arizona.

Presently in active practice. Interested in clinical practice. Available summer of 1957.

DAVIS, BERNARD MARTIN, M.D., 101 Tunbridge Road, Baltimore 12, Maryland, ObG, 1951 graduate of Georgetown University Medical School. Was originally a general practitioner, but will complete three years of residency training in July and then wishes to locate for specialty practice. Particularly interested in clinic with preferably 9 to 12 physicians.

EITEL, GEORGE D., M.D., 1409 Willow St., Minneapolis, Minnesota, S, 1924 graduate of University of Minnesota. Particularly interested in position as chief surgeon or medical director in industrial medicine. Desires regular hours. Has current Arizona license.

FUGLESTAD, EDSON VERCEL, M.D., 1157 Randolph, St. Paul, Minnesota, GP, 1953 graduate of Baylor University. Diplomate of National Board. Interested in partnership, assistant or associate practice. Available July 1, 1957.

IDDLES, ALAN, M.D. (Capt. MC 04035232) 16th Field Hospital, APO 696, New York, New York, GP, Has had residencies in obstetrics and gynecology and general surgery. Available in March. Interested in starting a small group practice with several other physicians who are leaving the Army a few months later.

JENSEN, RALPH, M.D., 307 LaMarina, Santa Barbara, California, GP, 1955 graduate of University of Cincinnati. Desires assistant or associate general practice in the Phoenix area. Now completing residency in general surgery. Available July 1st of this year.

KASE, SIDNEY, M.D., 440 West Cowles Street, Long Beach, California, GS and Or. Interested in general or industrial practice. Will be released from military service in July of this year.

McGANLESS, EDGAR S., M.D., 318 Avenue B West, Barksdale, AFB, Shreveport, Louisiana, Pd. Interested in group or associate practice in pediatrics. Will be available in April.

STERN, GERTRUDE S., M.D., 910 West End Avenue, New York, New York, Pd. Board certified pediatrician and at present Assistant Clinical Director of the Pediatric OPD at the New York Hospital. Wishes to relocate with husband (Below.)

STERN, SEYMOUR H., M.D., 910 West End Avenue, New York City, S-TS. Has had residencies in thoracic and general surgery, post graduate training in surgical anatomy and sur-

LOCATION INQUIRIES

BARTON, DAVID W., M.D., Cohocton, New York, GP, 1944 graduate of Cornell University.

gical pathology. Wishes to relocate with wife. (Above).

CARDONA, ARISTIDES, M.D., 106 Sims Road, Syracuse, New York, GS, Wishes to relocate to finish residency. Interested in clinic, associate or institutional practice. Available in June of this year.

CORWIN, JAMES HOWELL, M.D., North Avenue Apartments, B-7, Washington, Pennsylvania, GP, 1956 graduate of Jefferson Medical College. Desires general, assistant or associate practice. Available August 1, 1957.

CRONIN, JOHN, JR., M.D., 1100 Lathrop Avenue, River Forest, Illinois, OALR, 1942 graduate of Loyola Medical School. Presently practicing the specialty of otolaryngology; endoscopy, neck surgery in Illinois. Desires clinic, associate or assistant practice.

FISHMAN, RONALD, M.D., Grace-New Haven Community Hospital, New Haven, Connecticut, I, 1953 graduate of Temple University. Presently resident physician in cardiology. Prefers assistant or associate practice. Available July 1, 1957.

JORDAN, ROBERT HENRY, M.D., 1517 Roseland Drive, Birmingham 9, Alabama, I, 1953 graduate of University of Virginia. Interested in general, clinic or associate practice. Available in July of this year.

MORAN, THOMAS WESLEY, M.D., 107 Gerry Road, Chestnut Hill, Massachusetts, GS, 1947 graduate of Jefferson Medical College. Six years of training in specialty, Board qualified. Desires clinic or associate practice. Available August, 1957.

ORR, ISRAEL, M.D., 7016 South Cregier Avenue, Chicago 49, Illinois, Anes, 1954 graduate of Chicago Medical School. Presently serving residency in Anesthesiology. Available September 1, 1957.

PERLE, MARTIN HAROLD, M.D., 122 - 56th Street, West New York, New Jersey, Or, 1949 graduate of Indiana University. Board certified. Interested in clinic, associate or institutional practice. Available now.

NATUROPATHS

GOVERNOR Collins of Florida recently released a report which deals a heavy blow to naturopaths in that state.

The governor's report, based on an investigation which was begun last September, recom-

mends that the Florida legislature "abolish the practice of naturopathy." It is estimated that there are about 350 naturopaths in Florida.

The 109-page report, a copy of which was received by the A.M.A. Bureau of Investigation, reviewed among other things the details of so-called schools claimed as sources of diplomas by naturopaths licensed in Florida. The report said:

"Information pertaining to naturopathic education is difficult to obtain because schools are small affairs of a fly-by-night character with few students, and several months of investigation, including correspondence and on-the-spot visiting, revealed no school which confines its teachings to naturopathy. In every instance where any type of school existed, naturopathy was nothing more than part of a course given for the training of chiropractors."

The investigator further reported:

"None of the so-called schools had even one adequately trained teacher on the faculty, for there is no naturopathic school where they could be adequately trained; none has one worthily-equipped laboratory; none conducted a clinic in which a wide variety of common diseases could be studied; none had any affiliation with a worthy hospital, and none existed where any internship, externship or preceptorship is required."

The naturopathic situation in Florida is unique since these so-called drugless healers are, by reason of judicial interpretation of licensing laws, able to dispense and prescribe narcotics and antibiotics.

CORONARY HEART DISEASE: Angina Pectoris - Myocardial Infarction by Milton Plotz, M.D. 353 pages. Illustrated. (1957) Hoeber-Harper. \$12.

From the foreword; "The era just dawning, when illness is managed by physiologic principles and not by custom and when a great decrease in second attacks of coronary disease seems attainable, is fully described in the meticulous treatise to which Milton Plotz has devoted many years of preparation - by study, by discussion with leaders in the field, and by daily practical experience. The subject demands a full and up-to-date presentation, and the practicing physician and the beginner in medicine are fortunate to have such a volume as Dr. Plotz has given us." - William Dock, M.D.

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Future Meetings

The Twelfth Annual Meeting of the Ogden Surgical Society

THE OGDEN Surgical Society is pleased to announce the Scientific program of the annual meeting to be held May 22, 23 and 24, 1957.

PLACE: Ogden, Utah, The Scientific meetings will be held at the Egyptian Theatre, 2439 Washington Blvd.

PROGRAM: The following doctors have been obtained as guest speakers:

J. W. Cole, Associate Professor of Surgery, Western Reserve University School of Medicine, Cleveland, Ohio.

Robert L. Craig, Instructor in Surgery, Northwestern University Medical School, Chicago, Illinois.

Clement A. Finch, Professor of Medicine, University of Washington School of Medicine, Seattle Washington.

Louis Goodman, Professor of Pharmacology, University of Utah College of Medicine, Salt Lake City, Utah.

Stuart W. Harrington, Professor of Surgery, Mayo Foundation, Rochester, Minnesota.

Dwight E. Harken, Assistant Professor of Surgery, Harvard Medical School, Boston, Massachusetts.

Joseph L. Hollander, Assistant Professor of Medicine, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

John C. Jones, Associate Clinical Professor of Surgery, University of Southern California School of Medicine, Los Angeles, California.

Raymond E. Jordan, Assistant Professor of Oto-Laryngology, University of Pittsburgh, Pittsburgh, Pennsylvania.

D. Frank Kaltreider, Professor of Obstetrics & Gynecology, University of Maryland School of Medicine, Baltimore, Maryland.

Walter G. Maddock, Professor of Surgery, Northwestern University Medical School, Chicago, Illinois.

Alton Ochsner, Chief Surgical Staff, Ochsner Foundation, New Orleans, Louisiana.

James T. Priestley, Professor of Surgery, Mayo Foundation, Rochester, Minnesota.

Charles B. Puestow, Clinical Professor of Surgery, University of Illinois College of Medicine, Chicago, Illinois.

William M. Wallace, Professor of Pediatrics, Western Reserve University School of Medicine, Cleveland, Ohio.

Jack K. Wickstrom, Professor of Orthopedic Surgery, Tulane University School of Medicine, New Orleans, Louisiana.

ENTERTAINMENT: Informal parties will be held on Wednesday and Thursday evenings for all who have registered and their wives. Social events will be arranged for the ladies in attendance.

REGISTRATION: Make hotel registrations at once through the chairman of the Registration Committee, Doctor L. D. Nelson, Washington Terrace, Ogden, Utah.

AMA PLANS OUTSTANDING MEDICAL MEETING IN JUNE

PHYSICIANS attending the AMA's 106th Annual Meeting in New York City June 3-7 will find a star-studded revue of exhibits, scientific lectures, medical films and color television programs lined up for their pleasure and enlightenment. Approximately 18,000 physicians from all over the country are expected to participate in this world-famous "short course" in postgraduate medical education. Focal point of the scientific program will be the Coliseum — New York's new exhibition hall — with four floors devoted to technical and scientific exhibits, many of the scientific meetings and the color television program. A number of section meetings plus the scientific film program will be held in hotels near the exhibit hall. Headquarters for the House of Delegates will be the Waldorf Astoria.

An outstanding scientific lecture program is being arranged by the Council on Scientific Assembly. Kicking off the general scientific program on Monday morning, June 3, will be a review of recent progress in surgery while the afternoon session will deal with recent advances in medicine. Tuesday morning's general meeting will feature a discussion on the use and abuse of mood-altering drugs in daily practice.

Formal section meetings will run from Tuesday afternoon through Friday morning. Many of the sections will combine to present special symposiums and panel discussions. The Section on Miscellaneous Topics is arranging sessions on allergy, legal medicine with a mock trial involving the testing of drinking drivers, and

methods of improving communication in medicine. A number of exhibit-symposiums and question-and-answer conferences also will be held. Special exhibits on fractures, diabetes, perinatal mortality, pulmonary function testing, fresh tissue pathology, arthritis, and nutrition also will be presented.

The color television program presenting live surgical procedures from Roosevelt Hospital will again be sponsored in cooperation with Smith, Kline & French Laboratories.

A foreign air is being added to the regular medical film program for the first time. More than 20 foreign countries are sending special films dealing with many aspects of medical science to the "international medical film program." Both the international and regular film programs will be held at the Barbizon Plaza Hotel.

Registration officially opens at the Coliseum Monday at 8:30 a.m. and closes Friday noon. Advance registrations will be accepted Sunday from 12 noon to 4:00 p.m. The exhibit hall will be open to "doctors only" on Tuesday and Wednesday mornings to give physicians an opportunity to circulate more freely among the technical and scientific exhibits. For your comfort, the new Coliseum has many facilities, including air conditioning, escalators, elevators, a cafeteria, and snack bars.

Physicians and their wives should plan now to attend this worthwhile medical conclave. Further details will be published in the Journal of the AMA.

AMERICAN MEDICAL ASSOCIATION POST-SESSION TOURS

POST-SESSION tours to Europe and Bermuda are being offered A.M.A. members following the Association's Annual Session in New York City, June 3-7, 1957. Two European tours are offered — one of 24 days to France, Italy, Switzerland, Belgium, and France, and one of 38 days, which is a longer holiday, visiting England, Belgium, Holland, Germany, Switzerland, Austria, Italy and France.

In cooperation with the World Medical Association, special scientific sessions of exceptional interest have been planned in London, Paris and Geneva.

In addition to Europe, the post-session program includes three trips to Bermuda, designed

for those who may not have sufficient time for a European vacation. One trip is five days long — the other eight days, with an opportunity to make the round trip by air, or go one way by steamer.

ELEVENTH ANNUAL ROCKY MOUNTAIN CANCER CONFERENCE Denver, July 10, 11, 1957

GUEST speakers are: Drs. Richard H. Overholt, Boston, Surgeon; L. Henry Garland, San Francisco, Radiologist; Seymour M. Farber, San Francisco, Internist; Joseph Bank, Phoenix, Gastroenterologist; Alton Ochsner, New Orleans, Surgeon; Joseph A. Cunningham, Birmingham, Pathologist; and Arthur T. Hertig, Boston, OB-GYN Pathologist. The two symposia will be based upon Cancer of the Lung and Cancer of the Stomach.

THE AMERICAN CONGRESS OF PHYSICAL MEDICINE AND REHABILITATION

THE 35th annual scientific and clinical session of the American Congress of Physical Medicine and Rehabilitation will be held September 8-13, 1957 inclusive, at Hotel Statler, Los Angeles.

Scientific and clinical sessions will be given September 9, 10, 11, 12 and 13. All sessions will be open to members of the medical profession in good standing with the American Medical Association.

In addition to the scientific sessions, annual instruction seminars will be held. These lectures will be open to physicians as well as to therapists, who are registered with the American Registry of Physical Therapists or the American Occupational Therapy Association.

Full information may be obtained by writing to the Executive Secretary, Dorothea C. Augustin, American Congress of Physical Medicine and Rehabilitation, 30 North Michigan Avenue, Chicago 2, Illinois.

MODERN OFFICE GYNECOLOGY by George Blinick, M.D. and Sherwin A. Kaufman, M.D. 218 pages. Illustrated. (1957) Lea & Febiger. \$4.50.

This is about as condensed as you could wish. The first two sections will prove readily useful to general practitioners. The third section, giving an annotated bibliography, is alone worth the price of admission.

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1. Moyer, J.H.: J. Louisiana M. Soc.
108:231 (July) 1956.

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2. Wright, W.T., Jr., et al.: J. Kansas M. Soc.
57:410 (July) 1956.

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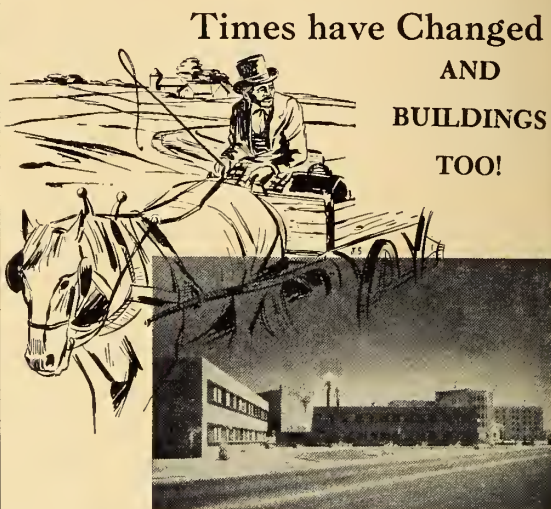
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PHOENIX *Clinical* CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL PRESENTATION OF CASE 41352

A FIFTY-THREE-YEAR-OLD man was admitted to the hospital because of severe abdominal pain.

Five days before admission, when fever and a sore throat developed, he was ordered to bed by his physician. He had no cough or pain in the chest. Three days later vague epigastric distress and gaseous eructations began. On the morning of admission, four hours before admission, he was suddenly siezed by epigastric pain, which became generalized within a short time. He was nauseated and vomited recently ingested food. The pain did not radiate to the back or shoulder. He had had no melena, hematemesis, constipation or diarrhea.

A peptic ulcer (? duodenal or gastric) had been demonstrated by a gastrointestinal x-ray series five years previously after symptoms of epigastric pain. He was treated by his physician with medications and a bland diet that he had since followed only as dictated by symptoms. He experienced periodic episodes of epigastric pain and "heartburn."

Physical examination revealed a flushed, toxic-appearing man in acute pain and very reluctant to change position. The heart was normal. The lungs were clear except for a few inspiratory stickly rales. The abdomen was tense and tender throughout. The tenderness was rated four plus in the epigastrium and two plus in the right lower quadrant. Very rare peristaltic waves were heard. Rectal examination was negative.

The temperature was 102° F., the pulse 120, and the respirations 30. The blood pressure was 130 systolic, 80 diastolic.

The urine was normal except for granular and hyaline casts and a few red and white cells per

high-power field in the sediment. Examination of the blood revealed a hemoglobin of 17 gm. per 100 cc. and a white-cell count of 7400. The sodium was 136 miliequiv., the potassium 3.5 milliequiv., and the chloride 94 miliequiv. per liter; the nonprotein nitrogen was 47 mg., and the amylase 8 Russell units per 100 cc. A guaiac test on the stool from the rectal examination was negative. A plain film of the abdomen showed gas-filled loops of small and large bowel and free air under both leaves of the diaphragm. An x-ray film of the chest showed linear atelectasis in both bases. An exploratory laparotomy was done three hours after admission, and a perforated gangrenous appendix with abscess formation was found. An appendectomy and drainage were performed.

The patient did fairly well postoperatively. His temperature remained practically stable between 98 and 100.5° F. On the ninth postoperative day he had a chill followed by a temperature of 102° F. On the eleventh postoperative day he complained of sudden weakness, and melena developed. The hemoglobin dropped from 13.1 gm. per 100 cc. postoperatively to 8.5 gm.; the white-cell count two days after operation was 15,200, rising to 36,000 a week later, and the hematocrit fell from 48.5 to 30 per cent. He was given three transfusions on the eleventh postoperative day and seven the next day. He continued to have loose, black stools estimated to amount to 2100 cc. On the thirteenth postoperative day he slipped into borderline collapse and vomited a small amount of blood. The blood pressure had a tendency to fall, and the pulse to rise. After three more transfusions had been given, a sub-total gastrectomy and an anterior Hofmeister antiperistaltic anastomosis with double jejunostomy were performed on the thirteenth day after appendectomy. At operation a greatly dilated, blood-filled stomach was found. A preliminary gastrotomy was done to evacuate the clots, and shallow ulcerations were seen along the lesser curvature. In addition to the gastrectomy, two ulcers of the duodenum were excised. Pathologically, the gastric and duodenal lesions showed active peptic ulceration. Thirteen transfusions were given during and immediately after the opera-

tion. Postoperatively, the gastric tubes drained more blood clots, and he continued to have bloody stools totaling approximately 4000 cc. on the second gastrectomy day. He continued to receive transfusions. Peristalsis was scant. He complained of extreme abdominal pain on the fourth gastrectomy day, which was relieved after the jejunostomy was unclamped and about 500 cc. of red and chocolate fluid drained. Abdominal distention precipitated separation of the edges of the wound on the tenth gastrectomy day, and about 500 cc. of purulent foul-smelling small-bowel contents was drained from the wound. The abdomen was quiet.

The electrolyte losses sustained from jejunal catheter drainage were replaced by parenteral injections of fluids. The course was one of a gradual decline, but he remained conscious and alert and was never in severe pain. The persistent postoperative gastrointestinal blood loss through the tubes and the rectum was treated with 26 blood transfusions. The hemoglobin varied from 6.5 gm. to 13.5 gm. per 100 cc. during the gastrectomy course. The prothrombin, clotting and clot retraction times were normal. The blood fibrinogen level was 0.34 gm. per 100 cc. A tourniquet test was negative. He died eleven days after the gastrectomy.

ROBERT S. FLINN, M.D.

This 53 year old man with a history of peptic ulcer five years previously entered the hospital because of abdominal pain and was operated upon three hours after admission. A perforated gangrenous appendix with abscess was found. On the 11th post-operative day, he developed gastrointestinal bleeding manifest by weakness and melena. In spite of ten transfusions in two days he continued to show evidence of gastro-intestinal bleeding with hematemesis, melena and collapse. Thirteen days following the first operation, he was operated upon again and small ulcerations were seen along the lesser curvature of the stomach and two ulcers in the duodenum were seen. A gastrectomy was done. Thirteen transfusions were given during and immediately after the operation with a total of 26 transfusions. In spite of this he continued to have bloody stools, abdominal distension and eventually separation of edges of the wound.

Apparently the patient continued to bleed in spite of transfusions, however the prothrombin

time, clotting time and clot retraction were normal, as was also the blood fibrinogen level. A tourniquet test was negative. The patient died eleven days after gastrectomy.

It thus appears that the differential diagnosis is that of hematemesis and melena, and it might be well at the outset to list the causes of such disorders. Bockus divides them into intra and extra gastric causes. Intra-gastric causes include peptic ulcer, gastritis, duodenal erosion, cancer of the stomach, tuberculosis, benign tumors of the stomach, post-operative hemorrhage, rupture of a sclerotic vessel, gastric crisis of syphilis, supra diaphragmatic stomach and trauma.

Among the extra gastric causes should be mentioned cirrhosis of the liver, portal and mesenteric thrombosis, diseases of the spleen (splenic anemia), Banti's syndrome and other splenomegalies, disease of the esophagus, polycythemia, purpura, hemophilia, pernicious anemia, Hodgkin's disease, leukemia, jaundice and hemolytic icterus. Also disease of the gall bladder, stomach and pancreas, lesions of the small intestines, cardiac and pulmonary disease and other systemic disorders such as toxic, infectious and nutritional conditions and finally he lists rupture of aneurysms and new growth.

By far the most common cause of massive gastro-intestinal bleeding is peptic ulcer. It accounts for 85% of the cases of massive bleeding. Ruptured esophageal varices and carcinoma of the stomach cause less than 10% of such bleeding. A hemorrhagic diathesis is a cause for gastric hemorrhage less than once in a hundred cases. One of the causes for hemorrhage little recognized is hiatus or diaphragmatic hernia. Bleeding may also be due to polyps. Carcinoma of the stomach of the usual type rather infrequently causes severe hemorrhage. Meckle's diverticulum may cause massive hemorrhage from the intestinal tract.

In view of the history and the course of the disease together with the normal prothrombin, clotting and clot retraction time, I believe that we can rule out blood dyscrasias. In as much as this patient undoubtedly must have had large amounts of antibiotics for the treatment of his peritonitis one must consider a pseudo-membranous entero-colitis as a cause for the gastric bleeding. However this more or less massive gastro-intestinal bleeding does not have the usual aspects of an entero-colitis. Indeed it appears to be that there can be little question

that the bleeding came from the stomach or duodenum. The question that arises is why an individual whose stomach was resected and whose duodenal ulcer excised should continue to bleed.

It is possible of course, that the bleeding comes from the gastric remnant from an ulcer which may have not been detected at the time of the operation or again may have come from the so-called hypertrophic erosive gastritis. Bockus, in his excellent text book, describes this condition very well. It is possible that a patient may continue to bleed following gastrectomies. In fact Bockus subjected a patient of his to gastrectomy because of inability to control the gastric hemorrhage and found eight large erosions or superficial ulcers scattered throughout the resected stomach. The patient continued to bleed after operation, the bleeding probably coming from several similar lesions in the duodenum or the remaining portion of the stomach. The patient died. Further examination failed to reveal any suggestion of blood dyscrasia or liver-spleen disease. Bockus continues "in the absence of ulcer symptoms it is possible that many patients who have had repeated bouts of hematemesis or melena bleeding from small erosions or ulcerations in the gastric stomach. A number of instances of massive bleeding are seen subsequent to gastroenterostomy and subtotal gastrectomy performed for peptic ulcer. After a post-operative ulcer cannot be demonstrated and the gastric changes found by the endoscopic examination have been thought to account for the bleeding."

This brings up the relationship between gastritis, duodenitis and erosions. Studies performed upon about half the cases of massive hemorrhage within two or three weeks after the cessation of bleeding fail to elicit any objective findings which establish unequivocally the exact cause and site of the bleeding. The bleeding in many cases may be due to acute ulcerations or erosions secondary to gastritis. Thus it appears there are many causes of bleeding from the gastro-intestinal tract other than frank ulceration. However it seems to me that this is a rather open and shut case of an individual with acute appendicitis who developed bleeding from his gastro-intestinal tract following the first operation, was subjected to a gastrectomy but continued to bleed from what I presume was an ulcer at the site of the gastric remnant or from

hypertrophic erosive ulcerations within the duodenum.

DIFFERENTIAL DIAGNOSIS

Dr. S. Peter Sarris: The simplest explanation of massive bleeding in a man with a long-standing peptic ulcer (who also had a perforation of a gangrenous appendix, which is rather common) is that postoperatively the peptic ulcerations became reactivated. He may have been one of the unfortunate ones in whom serious complications set in after gastrectomy, particularly an emergency gastrectomy in a bled-out patient. All the symptoms and signs that he had we see from time to time as the result of complications of gastric surgery, as complications of the peptic-ulcer diathesis or as complications of errors in technique during operation. For instance, the duodenal stump may have blown out, with subsequent peritonitis that finally reached the wound level and produced the foul-smelling abscess. The suture line may have leaked and resulted in peritonitis, or a loop of bowel may have been caught inadvertently in the wound closure. I assume that the double jejunostomy was done through a stab wound, as it usually is, and that the jejunum was not brought out through the wound, so that a loop of bowel may have been caught. The jejunostomy tube may have produced an obstruction or volvulus, which is a complication that we occasionally see after a jejunostomy. He may have bled from an unsutured vessel in the Hofmeister turn-in or in the anastomosis. Bleeding can also occur after a posterior gastroenterostomy from a so-called retrograde intussusception of the afferent loop with gangrene, although that is a rare complication. He may have continued to bleed from superficial ulcerations remaining in the gastric stump that were not seen at operation. A major vessel such as the superior mesenteric artery may inadvertently have been completely or partly sutured. Unfortunately, we see all those complications from time to time; they are risks of gastric surgery, particularly emergency gastric surgery.

Why do I not say that this explained the entire picture? I have three reasons for probing further. In the first place I do not think that Dr. Castelman asked me to discuss this case to emphasize the pitfalls of gastric surgery or of bleeding peptic ulcer. Secondly, it is unusual for

a patient to have so many complications of gastric surgery. Thirdly, and most important, there was free air under both leaves of the diaphragm. I daresay that since there was free air under both leaves of the diaphragm with the evidence of peritonitis, the surgeons first made an incision in the upper abdomen and explored for a perforated duodenal ulcer because in a patient with a known peptic ulcer that would be by far the more likely diagnosis. I shall ask later to be told whether that was so because it will mean a great deal when I decide what the patient had. My impression is that free air under the diaphragm, certainly in any substantial amount, is rare with a perforated appendix. To be sure, we do not do an x-ray study in the sitting position on every patient who has a ruptured appendix, but in the great number that I have seen, I have not seen free air under the diaphragm. I am not talking about the development of bilateral subdiaphragmatic abscesses, which were particularly common before antibiotics and with which there may be bubbles of air free under both leaves of the diaphragm, fluid levels and so forth. I am talking about the initial phase of the perforation. There are good reasons for that: an acutely inflamed appendix over 95 per cent of the time does not perforate at the junction of the cecum, where there is a fair amount of air, but distally, where there is very little air. Moreover, and more important, the inflammatory process around the appendix precedes the perforation, and usually fairly successfully walls off the perforation — at least sufficiently so that free air does not escape.

Could this man have had simultaneously a perforated ulcer and a perforated appendix? If so, when the operator found the perforated appendix, which was a perfectly adequate explanation for the symptoms, he did not look around for more disease. I myself have never seen simultaneous perforation of the two, but I have seen them within a few days of each other. I shall be able to settle that if the information is available. At any rate I have to determine on the one hand what events, if not all, may have been due to the two known diseases, the gangrenous appendix and the peptic ulceration or to the complications of the diseases and operations or both; and on the other hand what may have been due to another underlying disease.

May I see the x-ray films?

Dr. Joseph Hanelin: We have only films made before the first operation, which show a small amount of air under each leaf of the diaphragm slightly greater in amount on the right. I certainly agree that it is rare to see free air under the diaphragm, from a ruptured appendix. Air may enter the abdomen in strange ways. Recently, we saw free air under the diaphragm after irrigation of a ruptured bladder. One's first impression in the case under discussion is that of a perforated peptic ulcer. There is a large, dilated, fairly fixed loop of small bowel in the abdomen slightly to the right of the midline, which seems to maintain its position in the films taken both in the upright and in the supine position. This may be nothing more than localized paralytic ileus, but one wonders about fixation of a loop of bowel for some other reason. There is, in addition, gas in the region of the ascending colon and cecum, suggesting that these structures are displaced somewhat.

Dr. Sarris: Is there any evidence of gas in the intestinal wall itself?

Dr. Hanelin: I cannot be sure of gas in the wall itself. The lungs look quite all right except for the atelectasis.

Dr. Sarris: Could I ask whether the upper abdomen was explored at the time of the appendectomy?

Dr. Austin L. Vickery: The preoperative diagnosis was perforated peptic ulcer, and the upper abdomen was thoroughly explored.

Dr. Sarris: I shall go over the possible causes of postoperative bleeding. If this patient had peritonitis, he was probably on Levin-tube drainage. We have occasionally seen massive hemorrhage, particularly along the lesser curvature, from ulcerations caused by long-standing intubation of a patient. That would not explain the future course. Did he have cortisone therapy? Sometimes, a patient does not get along too well postoperatively and is given cortisone for a boost. Of course, cortisone can precipitate bleeding in a patient with an ulcer diathesis. A possibility that should be seriously entertained is a severe staphylococcal enterocolitis. As a rule that attacks the small and the large bowel, but there have been several cases in which the entire gastrointestinal tract from the esophagus down was involved. This man with a ruptured appendix probably had

antibiotic therapy. Did we have that after the appendectomy?

Dr. Vickery: Yes; he was given Terramycin (chlortetracycline) intravenously for two days after operation and then Chloromycetin (chloramphenicol) by mouth was substituted.

Dr. Sarris: For how many days?

Dr. Vickery: He was on antibiotic therapy continuously.

Dr. Sarris: Unfortunately, we are seeing with increasing frequency severe gastrointestinal manifestations, many of them fatal, as a complication of antibiotic therapy. The antibiotic therapy knocks out the usual intestinal flora and permits a resistant staphylococcus to grow. Diarrhea, shock and high fever are the usual manifestations, but massive gastrointestinal hemorrhage has been seen. Was a stool culture or blood culture done on this patient?

Dr. Vickery: No.

Dr. Sarris: I cannot make that diagnosis without help from the Department of Bacteriology, but I have to consider it seriously.

This patient may have had an underlying blood dyscrasia — that is, a leukemia — that was not noticed in the blood smear. To be sure, he had a perforated appendix and bleeding from a peptic ulcer, but the underlying disease may have been the leukemia, with massive gastrointestinal bleeding and finally death. It may have been a peculiar disturbance in the blood-clotting mechanism. The prothrombin time and clotting time appear to have been normal, so that I cannot make that diagnosis. I am in no position to make a diagnosis of a rare bleeding tendency. I assume that all the transfusions were not of citrated blood. We know that a patient who is going to require many transfusions certainly should not receive only transfusions of citrated blood.

I have seen a bleeding Meckel diverticulum that was confused with an acute appendicitis by a competent surgeon. The Meckel diverticulum had perforated and produced a severe reaction around the appendix, with pus formation. The appendix was removed, and later the perforated Meckel diverticulum was found. That would not explain the blood in the stomach of the patient under discussion.

Peculiar multiple septic emboli from an underlying septicemia may have to be considered, but again I cannot make that diagnosis without a blood culture. What about varices? I do not

believe that the surgeon could have resected the stomach without noticing the presence of portal hypertension. Nor could he have missed congenital multiple telangiectases. Midbrain lesions can produce peptic ulcerations, but there was no evidence of such lesions.

The bleeding lesion may have been missed at operation. It may have been a bleeding duodenal ulcer that was turned in with the duodenal stump — two ulcerations were removed. A bleeding lesion such as a small carcinoma or leiomyoma may have been left in the fundus of the stomach. I was stumped in this amphitheater nine years ago by a case of a cirroid aneurysm of the stomach, which produced massive bleeding. Perhaps after nine years Dr. Castleman thought he had better give me a similar case. I am sorry, but I cannot make that diagnosis.

One other disease that demands serious consideration — I was hoping to get help from the radiologist — is pneumatosis cystoides intestinalis, a disease that I discussed here about a year ago. Free air under the diaphragm that is asymptomatic and peptic ulceration are two findings that are almost pathognomonic according to some experts. In this case under discussion there was free air under the diaphragm and long-standing peptic ulceration, but there was also a ruptured appendix. Then, can I explain the free air under the diaphragm on the basis of a ruptured appendix alone? Air under the diaphragm with a perforated appendix is sufficiently infrequent to warrant the consideration of such a rare disease as pneumatosis cystoides intestinalis. This can explain the entire picture, for a perforated appendix may be a complication of it. Massive gastrointestinal bleeding, although very common in children with pneumatosis, is unusual in adults, but several patients have had exsanguinating gastrointestinal bleeding. There is a sign, which I do not see here: the so-called floating sign; because of the air sacs around the small bowel, it floats up under the diaphragm. In this film, particularly in front of and above the liver, one should see large or small bowel if this were pneumatosis. The other sign that I looked for was the scalloping rings of air around the bowel. In the absence of positive evidence all I can do is mention that diagnosis. Also, this small amount of free air could have come from the ruptured appendix.

My first diagnosis will have to be on a statistical basis — that is, bleeding from an ulcerating lesion of the fundus of the stomach that was missed at the time of operation together with a train of postoperative complications. I should like to mention almost equally seriously pneumatosis cystoides intestinalis.

CLINICAL DIAGNOSIS

Perforated peptic ulcer.

DR. S. PETER SARRIS'S DIAGNOSIS

Bleeding peptic ulcer of stomach.

? Pneumatosis cystoides intestinalis.

ANATOMICAL DIAGNOSIS

Acute peptic ulcerations in stomach remnant, with massive bleeding.. Ruptured stump of appendix, with generalized peritonitis.

Operations, recent: appendectomy for acute perforated appendicitis; subtotal gastrectomy.

Partial intestinal obstruction, transverse colon, by afferent loop of jejunum of gastrojejunostomy.

PATHOLOGICAL DISCUSSION

Dr. Vickery: When the abdomen was opened at autopsy there was a large amount of purulent, fecal-smelling exudate scattered over the serosal surfaces in addition to distinct pockets of pus. The gastrojejunostomy stoma was intact, and the jejunostomy stomas were likewise in good order. There was, in other words, no evidence of leak from the previous gastrectomy procedure — all the anastomoses and turns-in were intact. The stomach remnant was filled with clotted blood, and two large, superficial mucosal ulcerations were noted. One of these was located near the gastroesophageal junction and measured 3 cm. in diameter. There were numerous bleeding points in this ulcer base. The other ulceration was situated along the margin of the distal closed end of the stomach, and this measured 3.5 cm. in length. In addition the mucosa of the distal esophagus showed superficial ulcerations. These ulcerative lesions proved to be of the active, peptic type and undoubtedly were the source of the protracted gastrointestinal bleeding. No mucosal lesions or ulcerations were found in any portion of the small or large intestine. The gastric ulcerations found at post-mortem examination appeared to be of fairly recent duration whereas those removed at operation showed more fibrosis in their bases.

Now we have a cause for the bleeding. Do

we have an explanation for the clinical sequence of events on which Dr. Sarris has theorized? Another finding of note in the abdomen was the blown-out stump of the appendix, which thus accounted for the generalized peritonitis, wound dehiscence and general wound sepsis. When did the rupture of the appendiceal stump take place? We cannot be certain of that. It seems that it took place a considerable time before death, probably antedating by at least several days the wound infection and dehiscence. Still another complicating factor was a partial obstruction of the proximal transverse colon, which was distended to 18 cm. in diameter. This was caused by extrinsic pressure of the afferent limb of the jejunum leading to the gastrojejunostomy, which passed anteriorly over the transverse colon. Exactly what role this might have played in the sequence of events is debatable. Whether it preceded, with its dilatation and pressure, the blowing out of the appendiceal stump is difficult to say.

I think the important part about this case, which has been touched upon by Dr. Sarris, is that it reveals some of the complications of gastric surgery. This man had a predilection for developing peptic ulcers, and the ulcerations that formed postoperatively and caused the massive bleeding are a known complication in such patients — a complication that is poorly understood.

Dr. Allen G. Brailey: Was there any evidence of enteritis?

Dr. Vickery: No; there was not. Nor did he have any other complications. He had more than his share.

Dr. Edward B. Benedict: Do you think that he had perforated the ulcer in the beginning?

Dr. Vickery: No; there was no evidence of perforation of any of the peptic ulcers.

Dr. Benedict: From where did the air under the diaphragm come?

Dr. Vickery: I assume from the appendix.

WHITLA'S DICTIONARY OF MEDICAL TREATMENT by R. S. Allison, M.D., and T. H. Crozier, M.D. 854 pages. (1957) Williams & Wilkins. \$10.50.

Laying no claim to comprehensiveness, emphasis is put on the management of relatively common medical problems rather than upon rare conditions. The merely speculative has been rejected but special attention is given to well-tried and to promising new methods.

Stacey's Medical Books, San Francisco

SCHERING RELEASES ARTHRITIS FILM

A new 16 mm. color motion picture on the uses of steroids in the treatment of rheumatoid arthritis has been released for showing to professional groups by the research division of Schering Corporation.

The film reviews the chemistry, physiology and clinical application of the new "Meti" steroid hormones in rheumatoid arthritis and other collagen diseases. It presents the most commonly accepted theories of adrenal corticosteroid therapy and reflects the current knowledge of the subject.

The 25 minute film, which is the fourth in Schering's series on hormone therapy and the endocrines, was produced by the company's Clinical Research Division and Biochemical Research Department. Three leading rheumatologists and endocrinologists cooperated: Dr. Joseph Eidelsberg, Associate Professor of Clinical Medicine at New York University's Post Graduate Medical School and Chief of the Endocrine Clinic at University Hospital, New York, Dr. Abraham Kolodin, Senior Attending in Medicine at Mountainside Hospital, Montclair, N. J. and Dr. Evelyn Merrick, Rheumatologist at the Orange Medical Center, Orange, N. J.

The film is available to medical and allied professional groups on loan without charge. "Meti" Steroids in Rheumatoid Arthritis" and other Schering films may be obtained by writing to The Audio-Visual Department, Schering Corporation, Bloomfield, N. J.

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MENTAL HEALTH

MENTAL Hygiene, measured in sociological time, is a very recent movement. Its object has been clear from the start, but the means of achieving this objective has been greatly influenced by experience, and by the need of enlisting the attention of the lay public. The incidence of mental illness in the general population presents a national problem of great urgency; in fact, it has become America's No. 1 health problem.

There are more people in hospitals with mental illness than with heart disease, tuberculosis, cancer, polio and other physical diseases put together. We are going all out to save the victims of these diseases, but we are doing so little for the people who need us so much — the mentally ill. The outlook for mental illness however is today far more hopeful than for any other serious chronic disease.

The National Association for Mental Health has done much to promote good mental health, help the mentally ill, and to cut down the tremendous toll of mental illness. Modern methods of treatment are making it increasingly possible to restore mental patients to their homes and jobs.

One of the characteristics of a person with good mental health is being able to meet the demands of life. On a recent visit to our own Arizona State Hospital, I was made aware of some of the ways in which we as individual auxiliary members can meet these demands. Here there is no limit to the needs of the patients, who are after all members of our families, our neighbors, and our friends. One of the greatest needs of these patients is to know that they are loved by some one, and to be accepted.

Here is a way in which we can help! Either individually, or in groups, we can request the names of the patients who have no family, or loved ones, and we can do so much towards that patient's recovery by remembering his or her birthday. Perhaps a small gift, or just a card, will show them that we are truly interested in their problems. This is just one small way in

which we can acquaint ourselves with the needs of the mentally ill, and as a result spread interest in the field of mental health. The attitude of the individual citizen is an important factor in determining whether or not a mentally ill person can be rehabilitated. We must do all we can to make these patients feel whole heartedly accepted.

Since our first State and County Mental Health Chairmen were appointed in September 1953, there has been increasing interest in mental health activity. More auxiliary members are seeing the need of directing their activities towards this worthy cause and much is being accomplished.

The auxiliary members of the Gila County Medical Society donated sixty dollars to the Colony at Coolidge, Arizona. It was approved by general membership that profits from the Maricopa Auxiliary's project, the Rummage Sale, should go to the benefit of the Child Guidance Clinic. This amounted to fifteen hundred dollars. A benefit play was given by this Auxiliary, and proceeds were given to the local Mental Health Association.

Realizing that the school is an important environment to the older student as well as the child, the members of Gila County, in cooperation with the Committee on Mental Health, are purchasing and distributing the material "Milestones to Marriage" to all High School seniors in the County. This represents a lot of work for this small group, but I am sure much good will come from their effort. They also have put on a series of radio programs, sponsored by the American Medical Association, for a period of thirteen weeks.

Pima County had a meeting on Mental Health, and a talk was given, "Know Your Child." Five members donated thirty-five hours of work on a Mental Health Survey.

Yavapai reports members joined with the local Mental Health group in a survey for the Mental Health Association. They also worked with

schools and clubs in creating an interest in Mental Health.

Maricopa reports a film shown at a regular meeting, followed by a talk from a psychiatrist from the Child Guidance Clinic. The material, "Milestones to Marriage," was also made available to the Y-teen program director and is being used by that group. The members of this group worked closely with the Mental Health Association in promoting and publicizing their lectures and discussion panels. A progress report on the new Commitment Bill was given to the members of the Maricopa Auxiliary.

Despite the fact that we still have much to learn about mental illness, there is much we can do to give new hope and comfort to the mentally ill. Mental Health is something all of us want for ourselves, and one of the best means of acquiring it is to feel a sense of responsibility to our neighbors and friends, and to consider the interests of others.

"He profits most who serves best."

Mrs. Ruland W. Hussong
Mental Health Chairman of the
Auxiliary to the Arizona
Medical Association

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION THIRTY-FOURTH ANNUAL CONVENTION

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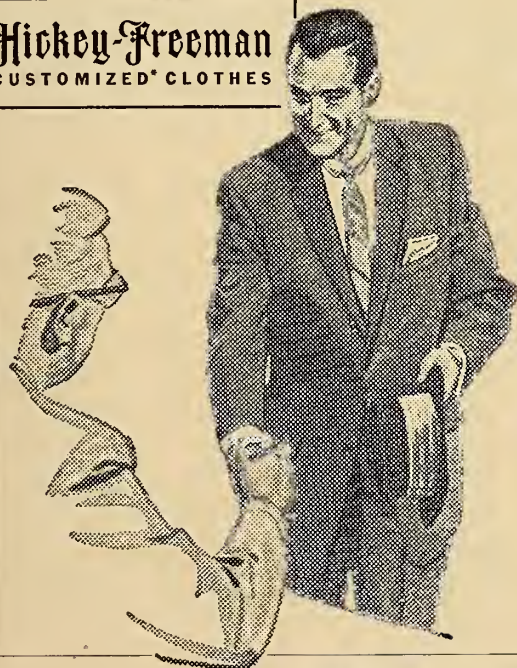
Mrs. Elliott V. B. Vurgason

THE DOCTOR AS A WITNESS by John Evarts Tracy. 221 pages. (1957) Saunders. \$5.50.

A clear and comprehensive guide points out the rights, duties, privileges, and compensation of physicians who must appear as witnesses in legal proceedings. The author describes the legal proceedings in which a physician may be called to testify, how they are conducted, and what is expected from a medical witness. Whether he is a witness in a malpractice suit, testifies on sanity, or is involved in compensation cases, the author explains exactly the physician's rights, his duties, what sort of questions he is obliged to answer and which he may refuse to answer, what assistance to expect from his lawyer, and what compensation to expect.

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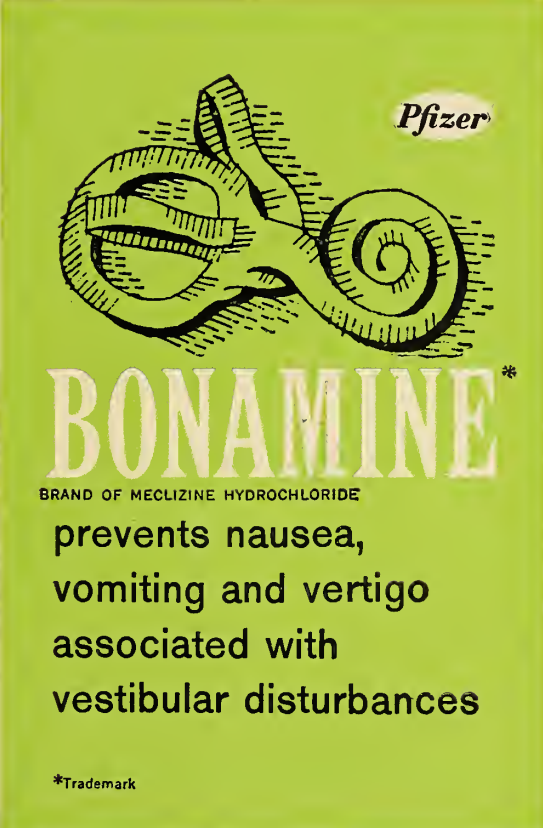
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Original ARTICLES

Treatment of Various Dermatoses with an Oral Topical and Parenteral Antipruritic

By Kenneth C. Baker, M.D.*
Tucson, Arizona

IN 1955 I(1) reported my results with Sandostene (1-methyl-4-amino-N²-phenyl-N²-(2-phenyl)-piperidine-tartrate) a new antihistaminic which has a pronounced antipruritic effect, in 120 patients complaining of various types of dermatoses, including 23 cases of neurodermatitis, 12 urticaria, 2 Schamberg's disease, 24 dermatitis venenata, 14 atopic eczema, 5 dermatitis medicamentosa with drug eruptions, 20 contact dermatitis, 10 eczematous and exudative seborrhea and 10 asthma with allergic manifestations. In this group of 120 patients, 57 obtained excellent results, 49 good and 14 fair. The results were so encouraging that I decided to continue its use. I found that Sandostene tablets, each containing 25 mg. of Sandostene, and Sandostene plus calcium in ampul solution for intravenous use, each cc. containing 50 mg. of Sandostene in 10 per cent calcium glucogalactogluconate, have a strong antipermeability, anticholinergic and antihistaminic action, as was shown by Rothlin and Cerletti(2). Sandostene plus calcium in lotion form was also employed and was found to be a useful adjuvant to the strong anticholinergic, antipruritic and

antihistaminic action of the tablets and ampul solution. For the sake of brevity, an extensive review of the literature dealing with Sandostene will not be entered into here, but a few pertinent references will be given.

Nasemann(3) treated 169 cases of itching dermatoses of allergic or non-allergic nature with 78 per cent relief of itching after intravenous injections of Sandostene and calcium. Dobes(4), Lapa(5), Clein(6), Cueva and Rodriguez(7), Saffron(8), Schuppli(9), Desai(10), Parker(11), Craig(12) and Modi(13) reported excellent results with Sandostene and Sandostene plus calcium as an anti-allergic and exudative agent. Bereston(14) reported excellent results with Sandostene as an antipruritic and for allergic dermatoses. Smith(15) reported excellent results with Sandostene tablets, Sandostene plus calcium ampuls, syrup and lotion in various allergic disturbances including contact dermatitis, drug rash and pruritus.

In our previous study, we observed the effect of Sandostene in generalized seborrheic dermatitis, drug eruptions, and urticaria, atopic eczema and neurodermatitis, acute exacerbation, dermatitis venenata, contact (plant and occupational), and pruritus associated with other syndromes. In

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the present study, I observed the effect of Sandostene tablets, Sandostene plus calcium ampuls intravenously and Sandostene plus calcium lotion in 105 additional cases. (See Table I). In the acute stage, 10 cc. of Sandostene plus calcium was given intravenously every day or every other day, supplemented with tablets of Sandostene in doses of 4 to 6 daily. If the itching persisted, topical application in the form of a lotion containing Sandostene plus calcium was employed with good results and without side effects. In a few instances it was observed, especially in the chronic case, that Sandostene was found equally as effective as the steroids without untoward incident. Evans and Rackemann(16), Feinberg, Dannenberg and Malkiel (17), stated that the effects of ACTH and cortisone, cannot be due to antihistaminic action. Pillsbury, Steiger and Gibson(18) have shown that certain types of allergic reactions such as urticaria, can be treated with antihistaminic drugs.

More recently I have employed Sandostene Spacetabs, each containing 75 mgs. of Sandostene, in 50 cases, one tablet two to three times daily for adults. This applies also to young adults, although occasionally the dose was reduced to one-half tablet twice daily, for the treatment of chronic urticaria, drug eruption, contact dermatitis, neurodermatitis and allergic dermatitis. Of the 50 patients treated with Sandostene Spacetabs, two patients complained of drowsiness which was transient, or disappeared when dose was reduced. Sandostene Spacetabs were administered to infants and children, with good tolerance, by crushing the tablet and adding to water and sugar. A decided therapeutic advantage of the Spacetab is that it provides sustained therapy from 8 to 10 hours and is safe. None of the patients complained of drug eruption, gastrointestinal complaints, frequency in urination, insomnia, irritability, or other side effects.

CASE REPORTS

N. N., male, 30 years old, diagnosis, seborrheic dermatitis, generalized. Patient had history of seborrheic dermatitis which became generalized due to tension and possibly a new drug he took. He was seen only once because his condition cleared up practically overnight, after Sandostene intravenously, tablets and lotion. Pre-

scription also prescribed for scalp, but it had nothing to do with his rapid improvement due to Sandostene.

A. H., female, 30 years old, diagnosis eczematous dermatitis, contact with generalization. Patient had been seen by previous doctors because of a contact dermatitis which started in her axillae from a deodorant. Before seeing me, she developed a generalized dermatitis from several new contacts and had used cortico-steroids orally and acthar jel intramuscularly without much improvement. With Sandostene plus calcium intravenously, lotion locally, Sandostene tablets orally and a small fractional dose of x-ray, she completely cleared up in one week, very happy and well satisfied.

L. L., female, 50 years old, diagnosis, atopic eczema with asthma. Patient has been seen periodically because of her atopic eczema. On June 29, 1956 she had a recurrence which was not controlled by acthar jel intramuscularly or cortico-steroids orally given by her allergist. When I saw her, she had a generalized dermatitis which was brought under control by Sandostene plus calcium intravenously, locally, and Sandostene orally. Later it was necessary to hospitalize her because of her recent sensitivity to Bermuda and alfalfa inhalants. The sedative effect of Sandostene plus calcium was remarkable and gave her more relief than other tranquilizing drugs.

D. H., male, 43 years old, Sept. 9, 1956, diagnosis dermatitis venenata with superimposed contact dermatitis. Patient had contact dermatitis from poison ivy for one week, with superimposed chemical dermatitis 48 hours before consulting me. All measures he used gave him no relief. Patient slept for practically 24 hours after intravenous Sandostene plus calcium and lotion locally. Marked improvement noticed in 24 hours — very little itching.

R. S., female, 31 years old, May 14, 1956, diagnosis, dermatitis venenata with treatment dermatitis. Patient developed a weed dermatitis three weeks before seeing me. Was badly over-treated so her itching was intense when I first saw her. She was greatly relieved by Sandostene plus calcium intravenously and locally and Sandostene tablets, and completely cleared up in 10 days. X-ray therapy given to eczematous areas.

E. M., male, 34 years old, diagnosis, dermatitis venenata. Four days before the patient saw me he had been on a picnic and contacted poison ivy. All medication used locally and internally failed to give him relief. Numerous new vesicles appeared every day. Sandostene plus calcium intravenously had amazing effect on the patient, practically causing cessation of new eruptions. Response was very gratifying. Patient was dismissed in 8 days — clear.

S. M., male, 68 years old, diagnosis, contact dermatitis, chlorine and chlorodine. This patient

had a beginning generalized dermatitis which responded nicely to Sandostene plus calcium intravenously and Sandostene orally. After inadvertently using another ointment he flared up again but is being brought under control by Sandostene plus calcium intravenously. Calcibronat intravenously did not seem to give as good results. Sandostene plus calcium lotion was very helpful in controlling new eruptions.

L. S., female, 25 years old, diagnosis, urticaria, cause unknown. This patient was only seen once by me. I saw her in rather an emergency situa-

TABLE I

| Diagnosis | No. of Patients | Excel. | Results Good | Poor | Side Effects |
|---|-----------------|--------|--------------|------|---|
| Seb. Derm. generalized . . . | 5 | 3 | 2 | 0 | None |
| Drug eruptions and urticaria, other causes | 30 | 16 | 10 | 4 | One developed severe headache. One became drowsy and had to reduce dosage. One had itching aggravated. |
| Atopic eczema and neuroderm. acute exacerb. | 20 | 9 | 6 | 5 | One developed sleeplessness. One developed mild headaches. One became quite nervous. Two developed dry mouth. |
| Derm. Venen., contact (plant occupational) | 20 | 10 | 8 | 2 | One had itching become worse. One developed dry mouth. |
| Pruritus assoc. with blood dyscrasias, lichen planus, diabetes mellitus, hepatitis, scabies | 30 | 10 | 14 | 6 | One became too drowsy so discontinued tablets. One thought dermatitis became worse. One developed headaches after first i.v. injection. |
| TOTAL | 105 | 48 | 40 | 17 | |

tion because of giant hives. I hesitated to use Sandostene plus calcium intravenously because she was alone and had to drive some 15 miles, but decided to take the chance. I told her to go directly home and, if sleepy, to go to bed. This she did and had a wonderful night's sleep. The next day she called to say she was entirely clear and wanted to know if she could wait another day before keeping her next appointment. The second day she called saying that she still was without hives so she was instructed to take Sandostene tablets and to see me again if necessary. I have not heard from her since, so assume that she is well.

I. B., female, 34 years old, April 10, 1955, diagnosis, urticaria. For approximately one month this patient had had persistent hives which were not controlled by the usual remedies prescribed, including ACTH intramuscularly, antihistamines and cortisone orally. She received great relief from one injection of Sandostene plus calcium intravenously and Sandostene tablets, and had a good night for the first time in many weeks. Injections were continued every other day, with sedation later because of emotional personal problems. She was dismissed in approximately three weeks, symptom free. The point of interest in this case was the great amount of sedation that she received from the Sandostene plus calcium. This has been the case in many patients who state that they thoroughly relax. I still have some "old timers" who come in occasionally for injections for that reason.

P. D., female, 39 years old, July 19, 1956, diagnosis, giant urticaria. I had seen this patient for a month prior because of a sun sensitivity which responded very nicely to Aralen Diphosphate and protective measures. She returned later with giant hives which appeared to be on an allergic basis (beer and Hollywood bread — B complex?). There was also some emotional problem, so she was given Calcibronat intravenously, sedation and cortico-steroid orally without results. Later ACTH intramuscularly with very little benefit. Then, elimination diet with some improvement. Finally, Sandostene plus calcium intravenously was given for the sedative effect and she promptly began to improve. The injections were given daily at first, later every other day. She was dismissed with dramatic results.

SUMMARY

1. Sandostene plus calcium parenterally and topically and Sandostene orally was used in a total series of 225 cases with various types of dermatoses.

2. Further evidence was accumulated to justify its use as an effective antipruritic, anti-allergic and anti-exudative agent.

3. Sandostene Spacetabs have a therapeutic advantage in that sustained therapy can be achieved over a period of 8 to 10 hours.

4. Sandostene with calcium intravenously and Sandostene orally, proved more effective than ACTH and cortisone in a few cases of intractable urticaria.

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Hemophilia and Related Conditions

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RECENT advances in the study of disorders of coagulation and particularly hemophilia have tended to be confusing to the average physician rather than to add to his knowledge of this group of diseases. The confusion has arisen as a result of the discovery of several disease states similar to hemophilia and because of the unfortunate names given to certain disorders which are in no way related to hemophilia.

Classical hemophilia is a disorder which has been recognized for centuries. It is an inherited disease transmitted from the male through an unaffected daughter to a grandson. Very rare clinical cases involving females have been reported. It must be assumed that mutations of chromosomes may arise now and then beginning a new hemophilic strain. The classical symptom of hemophilia is spontaneous hemorrhage following very mild trauma. This symptom is present from early childhood. These hemorrhages involve the skin, subcutaneous tissues, and joints most commonly. Repeated joint hemorrhages lead to ankyloses of the involved joints. Fortunately the gastrointestinal tract, nervous system and urological tract are less commonly involved. The defect in this condition is a lack of Anti-Hemophilic Factor (AHF) which is part of thromboplastin component. Examination of the blood of these patients reveals that they have an elevated clotting time and an elevated prothrombin consumption time. The bleeding time, prothrombin time, clot retraction and platelet count are normal.

In 1952 a disease similar to hemophilia was first described. It is due to the lack of a factor called Plasma Thromboplastin Component (PTC). Because the first case studied was in a patient named Christmas this illness is often called Christmas Disease. PTC deficiency is similar to hemophilia in its clinical symptoms. Laboratory examination reveals that the coagulation time and prothrombin consumption time are both prolonged in this condition also. However, the most diagnostic point for the clinician is that the *addition of normal serum will correct the abnormal coagulation time in this illness, but*

not in hemophilia. In the very mild cases it may be necessary to perform a more complicated thromboplastin generation test to establish the diagnoses. The addition of pure Anti-Hemophilic Factor to the blood of a patient with PTC disease will not correct the abnormal coagulation time.

Another curious hemorrhagic condition related to hemophilia has recently been described. This disease is due to a lack of Plasma Thromboplastin Antecedent (PTA). This disease may occur in both sexes. It is a milder condition than either of the first two conditions. Joint hemorrhages do not occur, and the coagulation time is only slightly prolonged. It differs from hemophilia in the fact that the addition of normal sera to the blood of the patient will return the coagulation time to normal. It differs from PTC deficiency in the fact that the addition of either serum or plasma absorbed with barium sulfate (BaSO_4) will correct the coagulation time of PTA deficiency but not PTC deficiency. This latter test is important to the hematologist, but is not of great importance to the busy practitioner. The fact that PTA deficiency occurs in both sexes, and is not associated with joint hemorrhages or a markedly prolonged coagulation time should allow it to be differentiated from PTC deficiency with a fair degree of accuracy.

A final disease which needs differentiating from hemophilia is the presence of a circulating anti-coagulant. This condition may occur following delivery, after radiation, or nitrogen mustard therapy, or as a complication of lupus erythematosus. Some of these circulating substances bear a close resemblance to heparin. Addition of the plasma of a patient with a circulating anti-coagulant to normal blood will cause prolongation of the coagulation time of the normal blood.

It is important that these conditions be differentiated from each other, as the treatment of these diseases is not the same. Hemophilia must be treated with fresh blood, or fresh frozen or lyophilized plasma which contains the Anti-

| | Hemophilia | PTC | PTA | Anti-Coag. |
|--|---|--|---------------------------|---|
| Sex: | Male | Male | Both | Both |
| Coagulation Time: | 30-60 min. | 30-60 min. | 15-30 min. | 30-60 min. |
| Joint Hemorrhage: | four plus | four plus | one plus | one plus |
| Clot time Improved | | | | |
| Sera: | 0 | yes | yes | 0 |
| Plasma: | yes | yes | yes | 0 |
| BaSO ₄ plasma: | yes | 0 | yes | 0 |
| AHF: | yes | 0 | 0 | 0 |
| Normal blood Coag. time | 0 | 0 | 0 | yes |
| Prolonged by patient's blood or plasma: | | | | |
| Treatment: | Fresh blood Frozen plasma Fresh plasma AHF | Bank blood Reg. plasma PTC extract? | Bank blood Reg. plasma | Toluidine Protamine ACTH, cortisone? |

Hemophilic Factor (AHF). Regular bank blood or pooled plasma is of no avail in correcting the coagulation defects. The local bleeding areas are best controlled with pressure and topical thrombin. The conditions due to deficiency in Anti-Thromboplastin Component (PTC) and Anti-Thromboplastin Antecedent (PTA) may be treated with regular bank blood and pooled plasma. Purified antihemophilic globulin is of no avail in correcting the coagulation defects of these two conditions. Circulating anti-coagulants are very difficult to treat. Blood and plasma appear to be of no help. Treatment with ACTH and cortisone seems to be of questionable help. Because of the relationship of some of the anti-coagulants to heparin, protamine and toluidine blue are often of help. If a history of dicoumerol ingestion is obtained, of course Vitamin K-1 is the treatment of choice.

There are two further disorders which tend to confuse the issue, primarily because of their names. Von Willebrand described an unusual disease which he called pseudo hemophilia. Unfortunately this condition bears no relation to hemophilia. It consists of a state in which there is evidence that the platelets are unable to function properly. The bleeding time is abnormal; clot retraction and prothrombin consumption time may be abnormal, but the coagulation time is normal. The platelet count is normal. So one has a state similar to thrombocytopenic purpura except there is no thrombocytopenia.

Para-hemophilia is another misnomer. This is a condition which occurs due to lack of Factor V which is part of the prothrombin complex and bears no relation to hemophilia. The major laboratory abnormality is an elevated prothrombin time. Normal plasma which is 48 hours old will have an elevated prothrombin time. Addition of normal fresh plasma will bring the prothrombin time of aged plasma to normal. However, fresh plasma of patients with this condition will not shorten the prothrombin time of aged plasma.

I have attempted to simplify the diagnoses of hemophilia and its related disorders. I have refrained from mentioning some minor and not very well described diseases. I have attempted to demonstrate how it is possible, by a few simple procedures which may be done in any office or laboratory, to arrive at the correct diagnosis in this group of confusing illnesses and to aid the patients with the correct therapy.

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Hepatic Coma A Clinical Study

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HEPATIC coma is a clinical syndrome long recognized and variously designated as acholia, (1) cholemia, (2) hepatargy, (3) and most recently, even perhaps most accurately termed portal-systemic encephalopathy. (4) In addition to the usual signs of liver failure, the characteristic clinical features in typical hepatic coma include emotional lability, mental dullness, delirium, flapping tremor, distinctive moaning cry, and abnormal neurological signs. The syndrome frequently progresses through irreversible coma to death. Wide variations in descriptions of this syndrome which exist are largely the result of differences in patient material and stages of coma in which the observations have been made.

It was the object of this study to review cases of hepatic coma which were personally observed during the last eight years. Careful attention was given to the detection of the earliest signs suggesting impending coma, since obviously this period should offer the greatest opportunity for its reversal. It seems clear that there is a state of pre-coma or impending coma which precedes true hepatic coma, and it may occur in any type of liver disease. No essential qualitative difference is to be noted in these signs in the patient with acute hepatitis or the patient with diffuse hepatic fibrosis. In both groups, pre-coma symptoms may be transitory and subside without progression into coma.

Deep hepatic coma varies from patient to patient, but the general features in all forms of liver disease are quite similar. Reversibility and recovery is more common in the patient with cirrhosis than in the patient with extensive cellular damage. Pre-coma may be very transitory, persist for days, or progress straight away to deep coma. True coma may appear precipitously or only after many days of pre-coma. It may either be irreversible, resulting in death, or clear completely with apparently no residuum. Certain variations in precipitating factors are also noted in the two groups.

Ephemeral as the evidence may be, there persists in the mind of anyone studying these patients, features which indicate a common

denominator regarding etiology. A diverse pathogenesis may exist in the several forms of liver disease, but somewhere a common casual factor probably exists.

PATIENT MATERIAL

Patient material for this study is divided into three groups. All patients were observed by at least one member of the group (MHD) and followed to autopsy or dismissal from the hospital during a period from January 1947, through August 1955.

Group I consisted of 43 patients with liver disease manifesting hepatic coma. The following criteria were observed in making the diagnosis of hepatic coma: 1) the presence of coma associated with delirium, flapping tremor, fetor hepaticus, or other signs and symptoms usually associated with hepatic coma; 2) the presence of primary or secondary liver disease; and 3) the absence of any other disease that would adequately explain coma.

Very likely, some cases of hepatic coma were overlooked or mistakenly omitted even though almost every patient with serious liver disease seen at this hospital during the past nine years has been seen by one of this group (MHD). It frequently is difficult, however, to determine the cause of coma in patients after massive hematemesis has occurred. The same is true in patients with malignant tumors which have spread to the liver and other organs.

Group II was composed of 100 healthy blood donors. Blood ammonia levels were determined on these individuals to establish normal values for our laboratory. The determination of the blood ammonia concentration was carried out by a modification of Conway's method. (5,6)

Group III included 14 patients with liver disease upon whom blood ammonia levels were done. Such studies were available only during the last six months of this study and consequently the number of patients in this group is small.

RESULTS

The diagnosis of the underlying liver disease in each case is listed in Table I. Post mortem

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examination was done in 31 cases and liver biopsy in six others. In the remaining six patients the diagnosis was made on clinical evidence.

Laennec's cirrhosis or, more properly termed, diffuse hepatic fibrosis was present in 24 patients. This is not an unexpected number of such cases since this disorder is probably the most frequent type of chronic liver disease.

The patients were almost equally distributed as to sex, there being 22 females and 21 males. Eight patients were Negro and 35 were Caucasian. This roughly represents the ratio of admission to this hospital. Their ages ranged from eight to 75 years. Three patients were in the first or second decade of life, one in the third, five in the fourth, 10 in the fifth, 16 in the sixth, seven in the seventh, and one in the eighth.

Table II lists the symptoms and signs most frequently observed prior to the onset of coma. Irritability, confusion, and delirium ranked in that order as evidence that coma was imminent.

Table III lists the most frequent physical findings. All but two of the patients were jaundiced at the onset of coma. Enlargement of the liver and ascites were the next most common physical findings. Thirty-eight patients had a temperature above 99 degrees F. Eight of the latter had a temperature above 104 degrees during the illness.

Table IV summarizes the neurological signs observed during coma. While muscular irritability and muscle tremor are constant features, either during pre-coma or coma, we have seen only one patient actually having convulsive seizures.

Tables V and VI show laboratory data on these patients.

Biochemical tests of liver function showed significant abnormality in these cases with severe hepatocellular injury. In patients with cirrhosis, however, this was not necessarily true.

An analysis of precipitating factors in hepatic coma are presented in Table VII. The most common event preceding the appearance of coma was of bleeding from esophageal varicosities or other undetermined sites in the upper gastrointestinal tract. This occurred in 21 cases. Three patients had received ammonium chloride prior to the appearance of coma. One patient had received amino-acid preparations intraven-

TABLE I
ETIOLOGY OF LIVER DISEASE IN PATIENTS
WITH HEPATIC COMA

| DIAGNOSIS | MALES | FEMALES | TOTAL |
|---------------------------------|-------|---------|-------|
| Laennec's Cirrhosis | 12 | 12 | 24 |
| Post necrotic nodular cirrhosis | 4 | 2 | 6 |
| Biliary cirrhosis | 1 | 3 | 4 |
| Infectious hepatitis | 1 | 3 | 4 |
| Serum hepatitis | 1 | 1 | 2 |
| Carcinoma | | | |
| Primary | 1 | 0 | 1 |
| Metastatic | 1 | 1 | 2 |
| TOTAL | 21 | 22 | 43 |

TABLE II
SYMPTOMS DURING PRE-COMA STAGE

| SYMPTOM | NUMBER PATIENTS IN WHOM PRESENT (43 Cases) |
|-----------------------|--|
| Irritability | 36 |
| Confusion | 30 |
| Delirium | 28 |
| Agitation | 23 |
| Lethargy and Weakness | 20 |
| Peculiar Cry | 19 |

TABLE III
PHYSICAL SIGNS OF HEPATIC COMA

| PHYSICAL SIGN | NUMBER PATIENTS IN WHOM PRESENT (43 Cases) |
|------------------------------------|--|
| Hepatomegaly | 42 |
| Jaundice | 41 |
| Fever | 38 |
| Ascites | 34 |
| Evidence Collateral Circulation | 33 |
| Liver Palms | 33 |
| Spider Nevi | 27 |
| Splenomegaly | 19 |
| Flapping Tremor | 19 |
| Fetor Hepaticus | 15 |

TABLE IV
NEUROLOGICAL SIGNS DURING HEPATIC COMA

| NEUROLOGICAL SIGN | NUMBER OF PATIENTS IN WHOM PRESENT (43 Cases) |
|----------------------|---|
| Normal reflexes | 24 |
| Babinski | 7 |
| Hypoactive reflexes | 7 |
| Hyperactive reflexes | 4 |
| Absent reflexes | 3 |
| Nystagmus | 1 |
| Convulsions | 1 |

ously. One had received exchange resins containing ammonium. Grouping these four items together, 26 patients had unusual amounts of nitrogenous substances in the intestinal tract before coma developed. Three patients developed pneumonia prior to the onset of hepatic

coma. Pre-coma and coma quickly followed paracentesis in three patients. Two instances followed surgery. Coma followed the administration of barbiturates in one, and narcotics in another. In only one case was an alcoholic debauch an incident immediately preceding hepatic coma.

Only four of these patients survived and were dismissed from the hospital. Of the 39 who expired, three patients had survived one episode of coma previously. One of these died in a second episode. One survived the second episode, but succumbed to a pulmonary embolus several weeks later. The third patient after being in coma 38 hours of his third episode finally succumbed.

The blood ammonia concentrations of the 100 normal blood donors (Group II) is presented in Figure 1. The values ranged from 34 to 133 micrograms with a mean of 79.5 (standard deviation 2.68) micrograms per 100 milliliters. Figure 1 shows the percentile distribution of the blood ammonia concentration in this group of 100 normal persons. Only one individual had a blood ammonia concentration below 50 micrograms per 100 milliliters. The blood ammonia of six individuals was over 110 micrograms per 100 milliliters. Since 93 per cent of this group had blood ammonia levels between 50 and 110 micrograms per 100 milliliters, this range was arbitrarily selected as representing the normal blood ammonia. We consider blood ammonia levels between 111 and 135 micrograms per 100 milliliters to be in a borderline zone between normal and abnormal. However, values over 135 micrograms may be considered definitely abnormal.

Table VIII lists the blood ammonia levels in eight patients with hepatic coma. Three patients (PC) (EN) and (GC), had normal blood ammonia levels, while the remaining five patients had abnormally high blood ammonia levels on at least one occasion.

Table IX lists the blood ammonia levels in six patients with liver disease who were not in pre-coma or coma states. All six had normal ammonia levels.

DISCUSSION

We use the term hepatic coma because of its widespread use and general acceptance. No term so far suggested seems entirely satisfactory,

TABLE V
HEMOGLOBIN, WBC, AND LIVER FUNCTION STUDIES *

| Case | Hgb. Gm. | WBC | SB D | SB T | AP | UU | FU | PT | BROM. | GC | TT | CE | SA | SG | SI | TC |
|------|----------|--------|------|------|------|------|-----|------|-------|------|-----|------|------|------|-----|-----|
| HF | 14.0 | 6,150 | 0.7 | 4.0 | 2.5 | 19.8 | 820 | 28% | 4 | 18 | 40% | 2.5 | 3.0 | 220 | 175 | |
| EA | 12.4 | 6,900 | 0.6 | 1.5 | 5.0 | 0.7 | | 76% | 4 | 22 | 50% | 4.5 | 3.5 | | | 140 |
| HJ | 12.0 | 3,150 | 12.0 | 24 | 3.0 | 1 | 200 | 48% | 4 | 28 | 30% | 2.5 | 4 | 140 | 200 | |
| FR | 9.8 | 5,950 | | 12 | 33.0 | | | 4 | 24% | 4 | 36% | 2.0 | 4.0 | | | 250 |
| HB | 14.2 | 4,150 | 4.0 | 7 | 12.2 | | | 55% | 1 | 4 | 5% | 3.0 | 2.0 | 45 | 175 | |
| MB | 10.7 | 26,150 | 5.0 | 10 | 10 | | 133 | 33% | 2 | 10 | 40% | 2.0 | 3.0 | | | 250 |
| TL | 11.8 | 16,400 | 2.0 | 5 | 2.0 | 0.9 | | 20% | 4 | 20 | 40% | 3.3 | 3.0 | 135 | 260 | |
| MMe | 15.8 | 33,600 | 14.2 | 36 | 8.0 | 4 | | 10% | 4 | 20 | 30% | 3.0 | 3.0 | 225 | 150 | |
| CC | 6.0 | 6,250 | 11.0 | 19.4 | 8.0 | | | 30% | 2 | 0 | 10% | 2.5 | 0.3 | 381 | 43 | |
| EA | 12.0 | 29,550 | 3.0 | 16 | 5 | | | 15% | 3 | 9 | 10% | 3.5 | 3.0 | 170 | 100 | |
| EY | 11.3 | 2,550 | | 12 | | 0 | 100 | 10% | 65% | 4 | 53 | 40% | 1.0 | 6.5 | | 100 |
| AC | 10.9 | 10,650 | 12 | 10 | | 2 | | 14% | 3 | 16 | 10% | 3.5 | 2.0 | 56 | 200 | |
| EW | 3.4 | 14,200 | 8.6 | 10 | 2.0 | | | 10% | 4 | 10 | 10% | 2.5 | 3.0 | | | 100 |
| PD | 11.6 | 11,550 | 8.6 | 14 | 2.5 | 3.0 | | 15% | 4 | 60 | 20% | 2.5 | 4.5 | | | 175 |
| KS | 9.5 | 4,700 | | 17.5 | 24 | 0.3 | | 20% | 4 | 20 | 20% | 2.5 | 3.5 | 156 | 100 | |
| PK | 13 | 6,900 | 6.8 | 14 | | 6.0 | 75 | 80% | 100% | 2 | 24 | 30% | 1.37 | 3.23 | | 200 |
| IT | 12.6 | 10,200 | 2 | 3.5 | 2.0 | | | 10% | 4 | 49 | 30% | 2.0 | 4.5 | 70 | 150 | |
| LY | 11.4 | 6,400 | 15 | 24 | 3 | | | 15% | 20% | 4 | 60 | 20% | 2.5 | 4.5 | | 175 |
| FT | 11.4 | 5,400 | 4 | 4 | 10 | | | 30% | 20% | 4 | 12 | 50% | 3.5 | 3.5 | | 150 |
| AM | 11.7 | 4,750 | 1.5 | | | 4.0 | 150 | 30% | 65% | 4 | 18 | 40% | 2.0 | 3.0 | | 98 |
| CB | 8.0 | 10,450 | 3.0 | | | 17.6 | 40 | 40% | | 1 | 6 | 50% | 1.8 | 2.6 | | 212 |
| WS | 6.0 | 21,500 | 1.0 | 8.2 | | | | | | 1 | 5 | 50% | 1.8 | 2.6 | | 212 |
| WR | 9.0 | 9,200 | | 14 | | | | 40% | 10% | 3 | 7 | | 3.5 | 2.0 | | 168 |
| ZM | 13.0 | 26,000 | | | | | | | | 3 | 5 | 20% | 1.5 | 3.0 | | |
| NS | | | | | | | | 16% | | | | | 2.3 | 3.2 | | |
| ES | 12.0 | 12,800 | 5.8 | 10.0 | 12.1 | | 75 | 79% | 1% | 3 | 13 | 38% | 3.13 | | | 295 |
| WM | 11.4 | 9,800 | 1.7 | 4.3 | 1.9 | 0.7 | 130 | 46% | 12% | 4 | 34 | 47% | 2.16 | 3.54 | 157 | 258 |
| BF | 9.0 | 6,800 | 1.9 | 6.9 | 1.6 | 5.9 | 426 | 43% | | 23 | 35% | 2.64 | 3.66 | 212 | 256 | |
| GC | 11.0 | 14,800 | 24.0 | 42.2 | 65.0 | | | 100% | Neg. | 9 | 6% | 2.61 | 2.39 | 590 | 768 | |
| MJ | 11.2 | 5,000 | 0.9 | 15.7 | 5.7 | | | 41% | 47% | 4 | 25 | 32% | 3.36 | 8.24 | 110 | 276 |
| RC | 12.5 | 15,200 | 3.2 | 5.0 | 5.7 | | | 75% | | Neg. | 24 | 45% | 2.48 | 4.82 | 95 | 300 |
| AC | 11.8 | 6,850 | 12.9 | 21.2 | 4.2 | 0.4 | 5 | 43% | 59% | 3 | 12 | 22% | 3.16 | 3.42 | 155 | 100 |
| PG | 7.0 | 6,250 | 7.9 | 14.4 | | | | 33% | | 3 | 4 | 65% | 3.47 | 1.43 | 268 | 237 |
| EM | 8.5 | 5,350 | 0.5 | 1.7 | 14 | | | 15% | | 4 | 17 | 23% | 2.31 | 3.29 | 276 | 79 |
| JMS | 9.9 | 6,000 | 4.4 | 6.4 | 1.9 | | | 43% | | 3 | 10 | 14% | 0.64 | 2.46 | 102 | 340 |
| RB | 10.4 | 27,100 | 6.6 | 10.9 | 14.3 | 7.8 | | 65% | | | | | 3.13 | 1.97 | | |
| AM | 8.7 | 7,500 | 7.0 | 11.5 | | | | 70% | 29% | 3 | 24 | 52% | 2.21 | 3.09 | 65 | 226 |
| EN | 11.0 | 6,550 | 0.5 | 1.9 | 6.1 | | | | | 4 | 17 | 32% | 2.87 | 3.93 | | 82 |
| CP | 9.9 | 10,250 | 11.3 | 19.0 | 7.6 | | | 19% | 40% | 4 | 18 | 39% | 2.11 | 4.79 | 110 | 118 |
| WS | 11.0 | 10,500 | 3.9 | 6.8 | 1.5 | | | | | 4 | 28 | 15% | 2.0 | 4.0 | | 200 |
| FT | 12.0 | 4,400 | | 20.6 | 11 | 0.4 | 2 | 27% | | | | | | | | |

* Key to abbreviations of tests

SB-D Direct serum bilirubin in mgm./100 cc.
SB-T Total bilirubin in mgm./100 cc.
AP Alkaline phosphatase in Millilunit units
UU Urine urobilinogen in units in a two hour urine sample
FU Feces urobilinogen in mgm. per 24 hours
PT Prothrombin in per cent of normal
BROM Bromsulphalein, 5 mgm. per c.c., in per cent retained

TABLE VI

ELECTROLYTES AND NPN STUDIES CORRELATED WITH ASCITES

| CASE | NPN | CO ₂ | Na | K | Cl | ASCITES |
|------|------------------|-----------------|-------|-----------|------|---------|
| MB | 117 | 12.6 | 111 | 5.4 | 82 | yes |
| FY | 30 | 26.6 | 131 | 4.6 | 102 | no |
| MMe | 42 | 21.8 | 144 | 5.1 | 102 | no |
| EA | 102 | 11.9 | 127 | 5.0 | 103 | yes |
| AC | Too high to read | 38.2 | 130 | 2.6 | 87 | no |
| PK | 34 | | | | | yes |
| LT | 65 | 25 | 127 | 4.6 | 113 | yes |
| KS | 37 | 16.8 | 138 | 5.0 | 97 | yes |
| JN | 37 | 28.8 | 455 | mgm. % as | NaCl | yes |
| IT | 101 | 18.5 | 128 | 4.5 | 105 | no |
| WR | 33 | | | | | no |
| NS | 46.6 | 17.9 | | | | yes |
| EW | 70 | 13.5 | 132 | 4.1 | 89 | yes |
| CB | 34 | 29.4 | | | | no |
| LT | 215 | | | | | no |
| EY | 50 | 10.6 | 500 | mgm. % as | NaCl | yes |
| CW | 30 | | 490 | mgm. % as | NaCl | yes |
| WS | 30 | 18.9 | 126.9 | 5.3 | | yes |
| ZM | 105 | 28.9 | 360 | mgm. % as | NaCl | no |
| FR | 60 | 18.5 | | | | no |
| TL | 44 | 30.6 | 127 | 3.1 | 94 | yes |
| PD | 28 | 24.7 | 125 | 4.5 | 107 | yes |
| EA | 159 | 25.0 | 138 | 5.0 | 108 | yes |
| HF | 56 | 20.3 | 132 | 4.5 | 105 | yes |
| CG | 32.5 | 23.0 | 130 | 4.5 | 101 | yes |
| HJ | 32 | 22.2 | 123 | 5.2 | 111 | yes |
| HB | 33 | 23.2 | 139 | 4.9 | 102 | no |
| ES | 39 | 18.5 | 123 | 6.3 | 98 | yes |
| WM | 45 | 11.0 | 119 | 8.1 | 96 | yes |
| BP | 32 | 18.5 | 123 | 5.1 | 93 | yes |
| CC | 28.5 | 17.8 | 132 | 4.7 | 98 | yes |
| MJ | 37 | 20.3 | 127 | 4.9 | 108 | yes |
| RG | 63 | 17.8 | 122 | 7.2 | 98 | yes |
| AM | 35.8 | 30.6 | 130 | 5.9 | 98 | yes |
| PC | 98 (BUN) | 14.0 | 120 | 9.2 | 115 | yes |
| JG | 55 | 20.7 | 156 | 3.5 | 126 | yes |
| EMS | 46.3 | 25 | 131 | 5.8 | 94 | yes |
| RB | 17.5 (BUN) | 16.8 | 110 | 6.8 | 83 | yes |
| AH | 42 | 27.0 | 131 | 4.3 | 96 | yes |
| EN | 8.6 (BUN) | 23.2 | 137 | 4.3 | 104 | yes |
| CP | 58 | 20.3 | 112 | 5.6 | 87 | yes |
| JB | 11.0 (BUN) | 19.5 | 128 | 4.4 | 91 | yes |
| FT | 30 | | | | | no |

although "portal-systemic encephalopathy" of Sherlock(4) expresses the clearest connotation of the clinical picture and pathogenesis.

Liver cell failure may occur in all forms of hepatic disease, but is most often associated with cirrhosis and acute hepatitis of viral or toxic etiology. Many features may accompany this hepatocellular failure, such as jaundice, ascites, endocrine disturbances, and circulatory changes. This discussion, however, is limited primarily to certain features of the central nervous system dysfunction.

Mechanisms of these neurologic manifestations have been the subject for much study during recent years. Sherlock's(7) explanation of the pathogenic factors include 1) portal venous-systemic collateral circulation, 2) defective liver cell function, and 3) nitrogenous substances in the intestine. This is the most lucid interpretation yet offered. Decreased liver cell function or by-passage of intact liver cells through portal venous-systemic collaterals gives access for high concentrations of ammonia to the central nervous system.

The clinical manifestations of hepatic coma may be divided into stages of pre-coma and coma. Depending upon the underlying type of liver disease, the clinical features may differ.

A typical example of the manifestations of the stage of pre-coma in severe parenchymal damage is often seen in the young child or adult with acute viral hepatitis. The disease may be ushered in with the usual gastrointestinal symptoms and jaundice. Within four or five days of onset the patient may suddenly and surprisingly become irritable, emotional, complain of severe headache, and somnolence. Response to questioning may be fairly normal, but may also reveal the patient's apparent irascibility and severe irritability. Conversational response may be strangely repetitious. A characteristic moaning cry often is spontaneously manifested by the patient while apparently sleeping. Upon awakening him you may secure no real evidence or reason for the apparent pain. Sensory defects and neurological deficit are not present in the pre-coma stage. Pre-coma may exist for a matter of several days terminating in complete return to normal, or advance to severe coma within a matter of eight to 12 hours.

Pre-coma in the cirrhotic patient presents a similar picture, but slight differences have been

TABLE VII
FACTORS PRECIPITATING HEPATIC COMA

| FACTOR | NUMBER (43 Cases) |
|---------------------------|----------------------|
| Gastrointestinal bleeding | 21 |
| Drugs | 9 |
| Ammonium Chloride | 3 |
| Barbiturates | 2 |
| Narcotics | 1 |
| Acetazolamide | 1 |
| Amino acid preparation | 1 |
| Cation exchange resins | 1 |
| Infection | 3 |
| Paracantesis | 3 |
| Surgery | 2 |
| Alcoholic debauché | 1 |
| No factor identified | 4 |

TABLE VIII
BLOOD AMMONIA LEVELS IN HEPATIC COMA

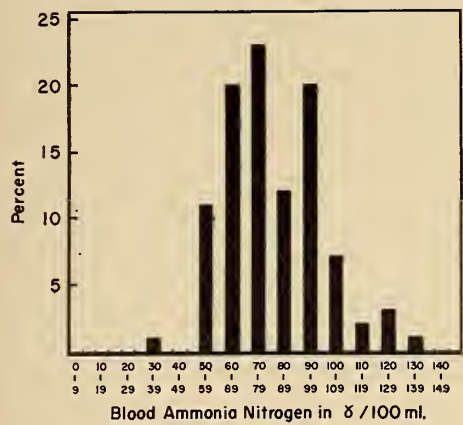
| Patient | Diagnosis | Blood Ammonia (micrograms per one-hundred milliliters) |
|---------|---|---|
| ES | Laennec's Cirrhosis | 130, 169, 80, 254, 207, 59 |
| JB | Laennec's Cirrhosis | 197, 90 |
| CP | Laennec's Cirrhosis | 127 |
| PC | Postnecrotic nodular cirrhosis | 101, 70 |
| EN | Postnecrotic nodular cirrhosis | 72 |
| AM | Biliary cirrhosis | 141, 131 |
| RG | Primary carcinoma of liver | 104, 108, 122, 186 |
| GC | Metastatic carcinoma of liver | 91 |
| GJ | Massive hepatic necrosis (Acute infectious hepatitis) | 490 |
| AP | Massive hepatic necrosis (Carbon tetrachloride intoxication) | 176 |

TABLE IX
BLOOD AMMONIA VALUES IN PATIENTS NOT IN COMA

| Patient | Diagnosis | Blood Ammonia (micrograms per one-hundred milliliters) |
|---------|--------------------------------|---|
| LC | Laennec's Cirrhosis | 83 |
| JF | Laennec's Cirrhosis | 74 |
| ES | Laennec's Cirrhosis | 69 |
| GS | Laennec's Cirrhosis | 61 |
| EN | Postnecrotic nodular cirrhosis | 84 |
| PL | Serum Hepatitis | 88 |
| HB | Thorazine Hepatitis | 74 |

FACTORS PRECIPITATING HEPATIC COMA WHICH
ARE CAPABLE OF INCREASING BLOOD
AMMONIA LEVELS

| FACTOR | NUMBER (43 Cases) |
|---------------------------------|----------------------|
| Blood in Gastrointestinal Tract | 21 |
| Ammonium Chloride | 3 |
| Amino Acid preparations | 1 |
| Cation Exchange Resins | 1 |
| Acetazoleamide | 1 |
| TOTAL | 27 |



observed. This patient, while showing no signs of worsening of his liver disease, may first complain bitterly of his care and the attention he is receiving. Such complaints heard from a previously happy patient may be the first subtle evidence of personality changes of pre-coma. Again, repetitious answers to questions may be obtained. Irritability, disobedience, and obtuseness characterize the patient's mental attitude. Aside from slight tremor and muscle twitching, neurological findings are minimal. All exhibited signs may disappear or progress to coma.

Coma in severe parenchymal cell damage and massive necrosis, as seen in the child and young adult, may present initially as extreme irritability and continue through delirium, mania, semi-coma, and the usually irreversible deep coma. Central nervous system dysfunction may be characterized by motor weakness, flaccidity, spasticity, pathological reflexes, severe tremors, and rarely convulsions. Jaundice is usually very deep and fetor hepaticus is common. Recovery in this stage is uncommon in our experience.

Deep coma in the cirrhotic patient regularly follows a long history of liver disease: Usually it is preceded by bleeding, infection, alcoholic debauch, injudicious use of drugs or the presence of abnormal nitrogenous material in the gastrointestinal tract. Most commonly the patient is brought into the hospital shortly after massive bleeding from esophagogastric varicosities. Within the next 24 hours the patient shows small personality alterations, becomes irritable, perhaps continues to bleed, refuses all medications and attentions, becomes less responsive to stimulation and drops into deep coma. The respiration may be deep and labored as in acidosis.

Jaundice, fetor hepaticus, and abnormal neurological signs are usually present. Electroencephalographic(8) changes are quite characteristic. In contrast to the patient with massive hepatic necrosis recovery is not uncommon. Such recovery likely points to fairly intact parenchymal liver cells and strengthens the theory of shunting phenomena either through or around the liver allowing access of some abnormal metabolite to the central nervous system.

The characteristic features of coma as seen in this group of patients and outlined above is composite of cases BP, CP, CA, MMc, and EN. Irritability, confusion, lethargy, flapping tremor and fetor hepaticus formed the most helpful symptoms and signs in predicting that coma was imminent.

Biochemical liver function tests were not helpful in predicting the onset of coma. For several years we have been impressed with the value of serum iron determinations in detecting the amount of parenchymal cell damage in patients with liver disease.(9)(10) Invariably this value is extremely high in patients with massive necrosis. Patient MMc is a good example. The serum iron value does give some indication as to the outcome of coma in such a patient. The degree of depression of cholesterol esters roughly parallels the elevation of the serum iron and aids in the prognosis of coma in patients with marked liver cell destruction. Neither of these values are helpful in the patient with cirrhosis unless death of liver cells occurs. The serum iron level in particular may be normal or low in the patient with cirrhosis. This was true, for instance, in the case of EN.

It is commonly stated that patients in hepatic coma develop hypoglycemia. Hypoglycemia was not observed in any of the patients in this series.(11)

The importance of ammonia in the pathogenesis of hepatic coma has recently been emphasized. Such relationship was suspected by Matthews(12) in 1922, when he noted coma in Eck fistula dogs after they had been fed on high protein diets. Elevated blood ammonia values in both cirrhosis and hepatic coma have been noted by several investigators. (4,13,14,15) Two factors seem to be significant in this situation: 1) the presence of excessive nitrogenous substance in the intestinal tract, and 2)

the bypassing of parenchymal liver cells by the portal blood with its high ammonia content. The patient with massive cellular destruction of the liver can not accomplish normal ammonia metabolism, but for a different reason than the patient with cirrhosis. Both may, and do, develop hepatic coma.

The liver is the most important single organ concerned with protein metabolism, illustrated by its recognized responsibility for formation and deamination of most amino acids. Ammonia from the latter reaction is converted to urea by the liver. It is intriguing to conjecture that in severe liver disease there is a failure to perform these functions and as a result an unusual accumulation of ammonia occurs in the blood. It is possible that the toxic ammonia ion through its effect on the central nervous system produces hepatic coma. We have also observed certain similarities in terminal patients with congestive heart failure and patients with hepatic coma. This has led to the speculation that blood ammonia levels in the patient with congestive hepatomegaly may also be elevated.

Walshe(13) theorizes that an abnormality of glutamic acid metabolism is responsible for the neurological changes recognized as hepatic coma. Glutamic acid is unique as the only amino acid supporting cellular respiration in the brain. It is also the one substance suggested as having the ability to detoxify and prevent accumulation of ammonia within the brain. Glutamine, the end product of this reaction, was found by Walshe(13) to be present in abnormally high concentrations in the spinal fluid of patients in hepatic coma.

Kirk's(16) study of ammonia metabolism in liver disease 20 years ago was not followed by attempts at clinical correlation until recently. Gabuzda, et al(17) reported the syndrome of impending hepatic coma in patients with cirrhosis given cation exchange resins. Since these resins exchange ammonia for sodium, it was felt they led to an elevated blood ammonia. McDermott and Adams(18) reported a patient in whom an Eck fistula had been produced during surgery for carcinoma of the pancreas. Typical symptoms of impending hepatic coma could be produced by feeding the patient a high protein diet, urea, ammonia chloride or ammonium containing exchange resins. Traeger (15) fed four patients with cirrhosis ammonium

chloride and noted higher elevations of blood ammonia levels, and more sustained levels than in four normals given the same dose of the drug. White, et al(19) with ammonium chloride tolerance tests, demonstrated similar phenomena.

It was felt that ammonium chloride administration led to hepatic coma in three instances (WA, CB, and PD). One patient (EA) who had had a portacaval anastomosis received amino acid preparations intravenously following surgery. His post-operative course had been uneventful until that time. On the fourth day, while receiving this agent, he developed typical hepatic coma and expired shortly thereafter. One patient (TL) had two episodes of coma quickly following the use of exchange resins. He recovered from both episodes only to expire later from pulmonary emboli. Of special interest is patient (HF) who had diffuse hepatic fibrosis with ascites. His course was uneventful until he received acetazolamide (Diamox) as a diuretic. Within 24 hours he had developed hepatic coma from which he did not recover.

Acetazolamide (Diamox) blocks carbonic anhydrase in the kidney, and hydrogen ions necessary for the conversion of ammonia to the ionic form are not produced. Without this conversion, ammonia produced by the kidney to conserve base is not excreted in the urine, but absorbed into the blood. In patients with severe liver damage or shunting phenomenon, abnormally high levels of ammonia might soon be reached.

Gastrointestinal bleeding is generally recognized as a precipitating factor in hepatic coma. The explanation for this relationship envisions the liver as being much dependent upon the portal blood flow for its oxygen supply, and bleeding episodes resulting in disproportionate reduction in portal over systemic flow may seriously impair the already damaged liver parenchyma. We feel that a much more pertinent factor is the absorption into the portal blood of breakdown products from blood in the gastrointestinal tract. Twenty-one of the patients in this series had major bleeding into the gastrointestinal tract prior to the appearance of symptoms of coma.

Although the exact mechanism is not clear, more and more evidence is accumulating to indicate that increased ammonia levels are important in the pathogenesis of hepatic coma. In

the limited number of patients in whom blood ammonia levels were determined in this study, high values were associated with hepatic coma, but coma was found to exist in the presence of normal values also.

Other precipitating factors were demonstrated in this study. Since some of these may be avoided in future cases, their recognition is in itself important as a preventive measure. Paracentesis for relief of ascites in liver disease has been frequently followed by hepatic coma and may also be considered a contributing factor in pathogenesis. Two of our patients (CP) and (MB), developed coma shortly after paracentesis, and another (EY), already in coma, became worse.

Patients with severe liver disease seem clinically unable to tolerate opiates and barbiturates. In three of our patients (MB, FY, NS) such agents seemed to be contributing factors in the development of hepatic coma.

Since treatment of patients in hepatic coma is so woefully inadequate, early recognition of the precipitating factors and prevention of this complication is of the utmost importance.

In either the case with marked parenchymal cell damage or with diffuse hepatic fibrosis and portal venous systemic shunting, diet, vitamins, attention to fluids as well as certain restriction of activities are necessary. While the high protein diet has been advocated for some time, there is now evidence to suggest that the protein may need to be restricted in patients with severe liver disease.(20) Barbiturates and narcotics should be used only with caution. Compounds containing ammonia or those that will increase body ammonia, such as acetazolamide (Diamox), cation exchange resins and amino acid preparations, should be avoided.

Prevention of gastrointestinal bleeding is in order, if possible. The use of anti-acids and other efforts made for the patient with peptic ulcer are indicated in the patient with known varicosities of the esophagus. Quick control of bleeding by tamponade is practical and occasionally lifesaving. Once bleeding has occurred, clearing the intestine of blood seems logical to avoid absorption of breakdown products.

Paracentesis should be done with caution, and only if indicated by considerable discomfort of

the patient. Steroid therapy may be of value in the treatment of hepatic coma.(21, 22) In four of our cases temporary improvement followed their use.

Walshe(23) has recently reported the successful use of intravenous sodium glutamate in hepatic coma. Two of the patients (JB and ES) who had repeated blood ammonia determinations were treated with monosodium glutamate in addition to the usual supportive measures. The blood ammonia of one of these patients (JB) fell from 197 to 90 micrograms in a matter of four days after receiving a total of 86 grams of monosodium glutamate. The other patient (ES) was in deep coma for 12 days and would not respond to any stimuli. During the last eight days of her life, she (ES) was given 23 grams of monosodium glutamate intravenously daily. After three days of this therapy, the patient came out of coma for a few hours and was able to answer questions. At this time, her blood ammonia concentration had dropped from 169 to 80 micrograms. However, this patient rapidly regressed back into coma and developed marked elevation of her blood ammonia level terminally. In these two patients the administration of monosodium glutamate resulted in a temporary improvement of the patient's symptoms and a lowering of the blood ammonia level; the eventual outcome, however, was unaltered.

SUMMARY

1. Forty-three patients with hepatic coma have been studied at this institution between January 1947 and August 1955 by our group. The symptoms, signs, and laboratory findings that we observed in these patients were similar to those previously reported in the literature.

2. In 39 cases, a factor precipitating hepatic coma was strongly indicated. Twenty-one patients had evidence of gastrointestinal bleeding with blood in the intestinal tract prior to the onset of coma. In six patients substances capable of increasing the blood ammonia were given. Therefore, a total of 27 patients were exposed to situations which would cause an elevation of the systemic blood ammonia level prior to coma. Infection was suspected in three and paracentesis in the same number. Barbiturates and opiates have been listed in two instances.

3. Blood ammonia concentrates were determined in 100 normal persons. Values between 50 and 110 micrograms per 100 milliliters were considered normal. Values between 111 and 135 micrograms per 100 milliliters were considered to be borderline, and values over 135 micrograms per 100 milliliters were considered definitely abnormal.

4. Present concepts as to the role of ammonia in the pathogenesis of hepatic coma have been reviewed. The correlation of blood ammonia levels in 14 patients in our own material have been presented.

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*The Effect of D.H.E.-45[®] and Bellafoline[®] on the LD₅₀ of *Centruroides sculpturatus* Ewing Scorpion Venom*

By Herbert L. Stahnke, Ph.D.

Director, Poisonous Animals Research Laboratory

Arizona State College, Tempe, Arizona

IN 1953, Mohammed and Karemi reported that the combination of D.H.E.-45 (Sandoz) and Bellafoline (Sandoz) acted as an antidote to scorpion toxin. Although they did not indicate the species of scorpion involved, it was assumed from some of their previous work that *Buthus quinquestriatus* was used. This species and our *Centruroides sculpturatus* produce a powerful neurotoxin. Since both venoms have much in common, we decided to test the effect of this combination on the venom LD₅₀ of our Arizona lethal species.

"Dihydroergotamine methane-sulfonate is a crystalline, semisynthetic alkaloid obtained from ergotamine by hydrogenation of the double bond in the lysergic acid radical. Bellafoline[®] is a chemically pure stable alkaloid complex isolated from fresh belladonna leaves, containing no atropine. It comprises the levorotatory alkaloids of belladonna as malates."⁽¹⁾

The above mentioned investigators found that with albino rats of 200 gm. body weight, the "best protective combination was Bellafoline 0.5 mg. and dihydroergotamine 0.1 mg. This mixture injected simultaneously with the toxin saved rats injected with as much as three times the minimal lethal dose of toxin."

Our measure of bio-assay is the LD₅₀. Therefore, using the method of Weil (1952), we used a dosage combination of 0.5 mg/100 gm. rat body weight of D.H.E.-45 (Sandoz) with 0.25 mg/100 gm. Bellafoline (Sandoz). The LD₅₀

of the lot of *C. sculpturatus* venom was 0.096 mg/100 gm. with a Confidence Interval of 0.085 to 0.109 mg/100 gm. The Da was 0.091 mg/100 gm. with R at 1.26, n = 3, and K = 3. After the venom was administered each animal received the dosage of D.H.E.-45 and Bellafoline as indicated above.

RESULTS

The mortality at the four dosage levels was 0, 0, 1, 2. Using Weil's formula $\text{Log } m = \text{Log } Da + d(f + 1)$, the LD₅₀ of the venom was now 0.172 mg/100 gm. with a Confidence Interval of 0.117 to 0.251 mg/100 gm.

DISCUSSION

The range of the two Confidence Intervals indicates that the difference between the two LD₅₀'s is significant and that the combination of D.H.E.-45 and Bellafoline, in the proportions used is antagonistic to *C. sculpturatus* venom. These results, as well as those of Battat (1954) with Egyptian scorpions, suggest that a combination of these drugs could constitute desirable supporting therapy for cases of venenation with a neurotoxic scorpion venom. More research work is indicated, however, in order to find the most desirable proportions of these agents and whether or not they might be used, in proper quantities, as the only necessary therapeutic agent.

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^{*}Dihydroergotamine methane-sulfonate (D.H.E.-45, Sandoz) and Bellafoline (Sandoz) supplied by Sandoz Pharmaceuticals Division, Sandoz Chemical Works, Inc., San Francisco 8, California.

THE *President's* PAGE

I AM VERY grateful for the honor you have bestowed on me and humble in the knowledge of the responsibility of the position. I only hope I can do as good a job as my predecessors. Any success will be in the committees and their functioning in the fields to which they are appointed. Also, we must try to have more doctors active in all phases of organized medicine. Please do not refuse to serve and then criticize that "the old crowd is running everything."

We must maintain and strengthen our vigilance against further encroachment into medical practice by federal, state, and local governments and by hospitals.

We must avoid dissension in our own ranks such as was present in the British Medical Association that enabled the Socialist government to put into effect the National Health Service of Britain. The doctors of Belgium stood together and steadfastly refused to go along with a plan similar to England's. They were able then to state what plan of medical assistance they would support and what they would not support.

This was a unified association standing together. Unless we so stand, we will be in the plight of the Britishers.

We must assume our full civic duties. It is a duty as well as a privilege for the American to be able to vote. This applies to school elections as well as national, state, and local elections. Also, the school boards spend more of your tax dollar than Uncle.

I would like to propose a contest between doctors, dentists, lawyers, and druggists to see which group will have the highest percentage of voters at, say the next general election. It would bring out some interesting figures to find which group is most active at the polls.

The Arizona Medical Association is called upon to sponsor and give support, or disapproval, to all health bills in the state legislature. We know the contents of the bills we sponsor. The ones introduced by others, we may not even hear of until introduction. These latter may be good, good in principle and poor in legality, etc., or may be very opposed to others.

If any group, with doctors on its board, is planning to introduce a bill in the legislature, we ask that you bring to the attention of the sponsors our procedures. The legislative committee meets and approves or disapproves the measure and makes recommendations to council of A.M.A. The council must then pass on the measure and/or a recommendation. Then, and then only, can the legislative chairman express the will of the Arizona Medical Association. The proposed mental health bill, or commitment bill, was not actually introduced. A copy of the proposed bill was first seen by Doctor Hamer about Feb. 7. Mr. Jacobsen rushed through a legal opinion in three days. He should have had at least a month. The bill should have been given to Doctor Hamer by Oct. 1 to permit proper study.

This may be a very controversial proposal, but I feel that we should have a published fee schedule. This should be our average fees and should be so stated. I will propose this to council for their decision, whether it should be studied by a regular committee or a special one. Our lack of a fee schedule approved by you made the negotiations for Medicare much more difficult. More and more the need for such a schedule becomes apparent.

I now come to a subject about which I feel we should forcefully assert ourselves. More and more the hospital administrators are telling us what we have to do. It is apparent that the hospital administrators are pushing their way into medical practice, out-patient clinics, semi-charity deliveries. Wesley Hospital, Chicago, has 150 doctors who have no offices except Wesley Hospital. The doctor is becoming a very profitable adjunct to the hospital.

"The tendency for hospital corporations to invade the practice of clinical medicine through the agency of employed physicians has been a matter of growing concern among medical organizations. In the opinion of GP, hospitals should be regarded as specifically equipped institutions where private physicians can render service to the sick. They should not be permitted

to become corporate distributing agencies for medical care." (March 1957 editorial GP, volume XV — number 3, page 69.)

A hospital's function is solely to care for patients. A doctor's duty is first and foremost to his patient. The patient must have free choice of hospital as well as free choice of physician. Yet the joint commission says we can belong to only one staff and meet their requirements. I do not know about Yuma, but in Phoenix, hospital beds are at a premium, four to six weeks in advance for elective surgery.

At \$25 and \$30 per day average cost, the hospitals are rapidly pricing themselves out of the market.

With all the increased regulations, the hospitals have had to steadily increase the staffs of the record room. This has increased hospital overhead. Yet, from this the patient receives no better care, only increased cost. The patient is really the "low man on the totem-pole." Will this increased overhead in the record room improve the care and treatment of the patient one iota? I doubt it!

I call for your constant vigilance against encroachment on our profession from all sources. There are things to be done. Let us not be backward in what we believe to be the right. May I quote from the "Prayer of Confession."

"We have done those things which we ought not to have done, and have left undone those things which we ought to have done."

C. C. Craig, M.D.

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ANAESTHETIC ACCIDENTS: The Complications of General and Regional Anaesthesia by V. Keating, M.D. 261 pages. (1956) Year Book. \$5.

They do happen and here is a small, honest, and interesting volume that deserves to be read and studied. We suspect that it is a labor of love by a lonely specialist in the Royal Army Medical Corps.

Stacey's Medical Books, San Francisco

CORRECTION

Note correction, page 276, Volume 12, Number 5, May 1957, article, "A Brief Summary of the Present Day Therapy of Collagen Diseases" by Harry E. Thompson, M.D. and Harold J. Rowe, M.D. In paragraph 10 of this article starting, "In Rheumatic Fever." The sentence "In the severely ill patient, large doses of Prednisone, Prednisolone or ACTH may be necessary to suppress the hyperthermia and minimize the undesirable edema, hypertension and gastritis" should read, "In the severely ill patient large doses of Prednisone, Prednisolone or ACTH, may be necessary to suppress the hyperthermia and minimize the acute myocardial and valvular damage. The dosage should be reduced as soon as possible to minimize the undesirable effects of these steroids i.e., salt retention, edema, hypertension and gastritis."

Editorial Page

ARIZONA MEDICINE

Journal of

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VOL. 14

JUNE, 1957

NO. 6

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CONTRIBUTORS

The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

8. Illustrations — Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.

9. Reprints — Reprints must be paid for by the author at established standard rates.

The Editor is always ready, willing, and happy to help in any way possible.

CONTRACT PRACTICE

RECENT discussions between the A.M.A. Committee on Medical Care for Industrial Workers in Chicago as represented by Dr. William A. Sawyer of Rochester, the chairman of this committee and Dr. Warren F. Draper, the Executive Medical Director of the U.M.W.A. Welfare and Retirement Fund reiterate the problems regarding the relationship between this or any company or union fund and physicians or medical societies.

Their problems again bring into focus the fact that (1) most of these policies adopted by a fund will in effect reduce or eliminate the right of the worker to select a physician or hospital; (2) invariably there is an assumption by the fund of the prerogative of judging the quality of treatment given by physicians, their qualifications for hospital appointments, and an effort at selection of hospital staffs; (3) the actions of the fund departments from fee-for-service remuneration; (4) strained relations develop between medical societies and the area medical administrators because of alleged officious and paternalistic actions by area administrators.

These are inevitable deficiencies of this type of planned medical practice, and steps to guard against them are essential. The delegates are to be commended upon their recent establishment of a specific committee for representation of the medical profession in the development of any of the future industrial insurance policies of the state which carry medical benefits.

CARCINOMA OF THE BREAST: The Study and Treatment of the Patient by Andres G. Jessiman and Francis D. Moore, M.D. 135 pages. Illustrated. (1916) Little, Brown. \$4.

An extension of a progress report, initially published in the New England Journal of Medicine, presents an integrated study of patients with carcinoma of the breast in the light of current knowledge and research relating endocrine and metabolic aspects to surgical care.

LETTERS TO THE EDITOR

MEDICAL EDUCATION

Editor, Arizona Medicine:

THIS LETTER will serve to recall to you our conversation at luncheon recently. You will recall that we discussed several aspects of the student exchange program of the Western Interstate Commission.

I think everyone will agree that the motives of the legislature were excellent and very commendable when they set about to include our people in the Western Interstate Commission program. This program is not meant to provide scholarships, but it is designed to aid students in medicine, dentistry and veterinary medicine to the extent that they can attend professional schools in these fields in one of the 11 Western states at approximately the same financial cost as the student who is a legal resident of the state in which the school in question is located. To this extent, the state partially makes up for the fact that we do not ourselves have these professional schools available, and it relieves the eligible student from the necessity of paying out-of-state tuition. It does seem a little unfortunate, however, that the restrictions on eligibility are so severe. As a matter of fact, the restrictions on the Arizona student are much more severe than they are on a student from any other state. To be eligible for certification under this state program, a student must have been a bona fide resident of the State of Arizona for at least the last 10 years. Since roughly 40 per cent of the population of the state has been here less than 10 years, this would seem to eliminate an unduly large percentage of our potential students. Although one can understand why the legislature wished to be rather careful about who becomes eligible for this financial assistance, the fact remains that a newcomer becomes eligible to vote in this state after one year's residence, that he becomes eligible to attend the state university and the state colleges without paying non-resident tuition after one year's residence and he certainly becomes eligible to pay taxes to the State of Arizona long before one year's residence is completed.

The other restriction put upon the Arizona student that seems a little extreme is the requirement that he agree to return to practice in this state two years for each year he received

his out-of-state tuition under the contract program. This means that the student who spends four years in medical school under this program has obligated himself to practice the first eight years of his professional life within the State of Arizona. If he does not do this, he then must repay to the state the sum of \$8,000 with interest. Here again, one can understand the legislature's wish to secure medical services for the people of the state and to retain the services of those who have been trained at the expense of the taxpayer's money. On the other hand, the taxpayer's money also operates the university and state colleges and there is no restriction put upon the graduates of any of these schools or colleges within these institutions. The Arizona student may graduate and leave the state within 24 hours, never to return. This is, of course, as it should be. But the more one thinks along these lines, the more one wonders whether or not this restriction on the student who undertakes a professional education under the student exchange program isn't rather excessive. No other state puts such a severe restriction upon its students; most of them have no restriction whatsoever.

H.R.

KUDOS AND WARNING

Editor, Arizona Medicine:

KUDOS AND commendations are due our past president, Dr. Podolsky, and our newly elected secretary, Dr. Smith. The former for his forthright and perceptive discussion of present legislative and socio-economic trends as presented on The President's Page. We hope he and others will continue to "squawk like hell." The latter for his editorial entitled The Nylon Nightie, which so effectively deals with the hate-fomenting articles too frequently appearing in our lay magazines.

American medicine has steadily lost ground to socialization since 1950, suffering one defeat after another that could have been avoided.

We have permitted our fine impulses of sympathy and concern for the less fortunate, the exploited, and the incapacitated to lead us into accepting nostrums, cleverly suggested by conspirators. We did not recognize that we were introducing authoritarian plans into a society of free men; and that each such action was as dangerous to free men as the relaxation of con-

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Boger, W. P.; Strickland, C. S.; and Gylfe, J. M.: Antibiot. Med. & Clin. Ther. 3:378 (Nov.) 1956.

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trols are to dictators. We have demonstrated an inability to recognize programs aimed at superficially desirable objectives which camouflaged actions aimed at destroying our society. Socialization of medicine is but a part of the overall plan. It is a tragic fact that our system is so virile that it seems flourishing even as it is being destroyed. The few who have the courage to try to raise the backdrop and disclose what is backstage, are subject to the indifference and ridicule of the majority whose apathy is such that they wouldn't believe it if they saw it!

It is up to those within the medical profession to expose socialization for what it really is in all its evil aspects. More articles such as these are sorely needed to awaken the profession. Medicine should share in the growing revolt against the destruction of our American way of life.

L. D. Sprague, M.D.

NONINFECTIOUS PLASMA

Editor, Arizona Medicine:

I AM TAKING the opportunity of sending you reprints of a study by Dr. Paul Hoxworth and Dr. Walter Haesler of Cincinnati, on Safety of Stored Liquid Plasma. There are also two copies of an abstract of this reprint. I think this is a very timely study and a very important one, and one that should be circulated among the members of the medical profession in Arizona through Arizona Medicine. These studies confirm what has been our impression; that plasma stored at room temperature for six months to a year is virtually noninfectious as far as serum hepatitis is concerned. I feel that it is unfortunate that liquid plasma has acquired such a bad reputation because of the high case rate of serum hepatitis following the use of lyophilized plasma. I feel that there are definite indications for the use of plasma where it is preferable to use plasma rather than whole blood, and that if the safety of this product is shown to the members of the medical profession in this state, it might result in better patient care in those cases where blood products are indicated.

James D. Barger, M.D.

(Editor's note: See Topics of Current Medical Interest in this issue.)



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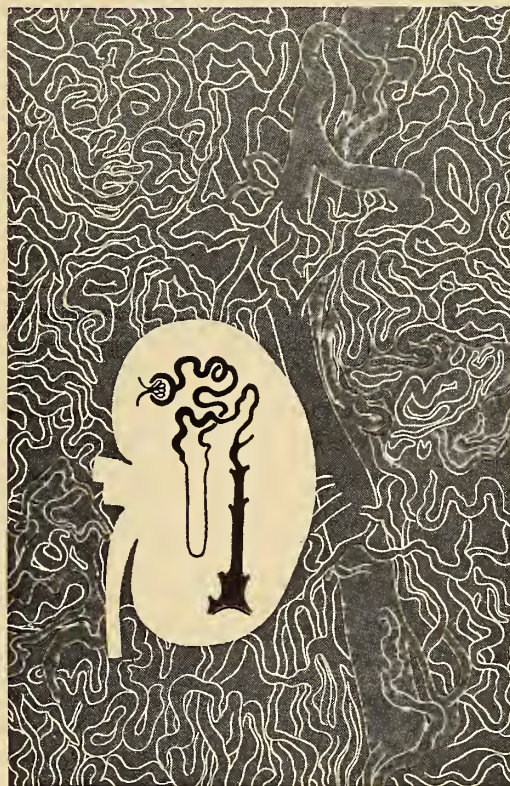
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**SEARLE**

The History of Medicine in Arizona

SMALLPOX

By N. C. Bledsoe, M.D.

SMALLPOX, which had been the scourge of the world before the discovery of vaccination by Jenner, was still a dreaded disease in the early 1900s. Compulsory vaccination had not reached its maximum benefits. Along the Mexican border smallpox was still quite prevalent. In 1906 I was appointed assistant health officer of the Bisbee district, and at this time the so-called "Pest House" was located on the edge of the garbage dump. It consisted of a one room shack where the inmates cooked, ate and slept. Some individual who had had the disease was installed as nurse. It was isolated. The laity believed that whiskey was the medicine of choice and the saloon keepers kept the inmates plentifully supplied. Later on an adequate and comfortable hospital was provided with a trained nurse in charge.

In 1906 an epidemic of smallpox broke out in Tin Town, most of the houses in that section being made from flattened five gallon oil tins. There were six or eight cases of smallpox and about 20 people had been in actual contact with the six. These latter were placed in isolation in a barbed wire enclosure and guards stationed around the camp. Tents were provided as well as food and medicines. Relatives did the nursing. Rounds were made every day, and on entering the camp I donned an old fashioned ulster, close fitting and hot, and cotton gloves, all of which were kept in a suitcase, doused in formaldehyde between wearings, and stashed under a mesquite until some thieving rascal stole the entire outfit. One night one of the interneers escaped, and I searched for him through every house in Tin Town and was about to give up the search when an old Mexican woman called: "Senor, aqui esta un viruela!" (There is one with smallpox here) and pointed to an abandoned frame shack. Looking in I saw a cot, unoccupied, and behind it a man crouching. It was my escapee. I called the deputy sheriff to come and get him. He came, and as he was too lazy to send for a spring wagon (we had no ambulance) he told the fellow to get up on the horse behind him and in this fashion he was taken back to the camp. The deputy

was loaded with spirits so he allowed he was immune from all ills.

There was one case which stands out in my mind very vividly. One of the young lads about 14 years of age came down with the disease and in 12 hours he was bleeding from the nose, mouth, bladder and rectum. It was a very fulminating case of "Black Smallpox." This one really scared me as I had never had the disease and I was to be married the following week, so I decided that I had better stay away from the smallpox victims. I explained my fears to my employers and while they laughed at me, they readily took over my task. No one can foretell how a given case may develop; some are mild and others virulent, and I was taking no chances. The following week the quarantine was lifted.

No one can doubt the efficiency of successful vaccination as the following case will demonstrate. An itinerant family consisting of a mother and three children, ages 19, six, and an infant, drove into Bisbee. The mother had smallpox. I immediately vaccinated the children, the only "take" was in the 19-year old girl. She got off with only a few lesions, but the two younger children had severe cases and died. The mother lived but was terribly disfigured. Thank God for vaccination.

PRACTICAL DERMATOLOGY by Samuel M. Peck, M.D., with Laurence L. Palitz, M.D. 375 pages. Illustrated. (1956) McGraw-Hill. \$7.

Because of the recent introduction of many and potent therapeutic agents in dermatology, the general practitioners will find this volume especially timely and useful in daily practice.

Stacey's Medical Books, San Francisco

INTERPROFESSIONAL MEETINGS

Many county medical societies have found interprofessional meetings with other health groups to be invaluable in solving mutual problems or settling between-profession conflicts. Instead of waiting for the suggestion of a meeting to come from another group — why not evaluate your 1957 PR agenda right now. Have you scheduled meetings with local lawyers, dentists and pharmacists?

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TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M.D.

DOCTORS, ministers, and other philosophers have suggested that patients should have a better ATTITUDE TOWARD DEATH. It should be possible to adjust, especially for religious people, but there are obstacles, including family ties, indispensability, habit, fear, et al. . . . We hereby suggest an attitude which doctors, or some paramedical group, or a church group (or the women's auxiliary of the medical associations!) could use to form such societies. Older people and ill people could join together, or simply become members of 'THE COURAGEOUS TRAVELERS' or a similar titled aggregation. They could have as their slogan, "LIVE LONG; LIVE WELL; HAVE PEACE OF MIND; AND WHEN THE TIME TO GO ARRIVES, TO BE NOT AFRAID!" . . . They might be sustained by the mutual association, or by a publication, or by a medalion, and they could be proud of their group and action.

This is the story of a trip from Somewhere to Nowhere (and back). . . . A national medical journal (which consists of abstracts, summarizing articles, and advertisements), liked the Guillermo Osler column in ARIZONA MEDICINE. They considered having such a column written for them by the same author. . . . The problem then arose as to whether Osler should transfer his allegiance, to a probably backbreaking job (24 columns per year), maybe one not so congenial, but with lots of FAME, (and maybe MONEY!) . . . Just after we had decided that it would be better to continue to 'blow southwesterly', the nat'l. mag. decided not to have such a column. . . . So here we are, with a few practically unused dreams plus our peace of mind. 'Poor but Proud.'

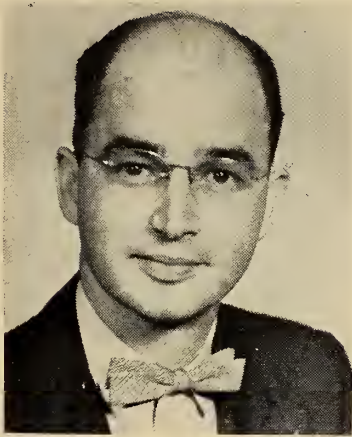
People in Arizona hardly need the new Raytheon device which we have just seen advertised, but it is interesting to foreign readers of our journal. It is called the Micronaire Electronic AIR CLEANER, and it removes pollen, dust, smoke, bacteria, and all airborne particles to the extent of 99.2 per cent efficiency. . . . That's as good as the air in Tucson, says a man from Phoenix.

A hopeful note on COR PULMONALE was uncovered at the N. Y. State medical meeting. It used to be considered hopeless 10 years ago, but therapy may be very helpful and the condition be preventable, said Dr. M. Irene Ferrar of Baltimore. . . . The attack should be on the lungs rather than the cardiac insufficiency. The parent source may be pulmonary. . . . The plan of treatment should include anti-biotics, vaporized bronchodila-

tors, digitalization, phlebotomy, and carbonic anhydrase (to eliminate the carbon dioxide). . . . In California they also use IPPD (intermittent positive pressure breathing), but the eastern cases which come out West are sometimes tough to treat even with the entire armament of therapy.

Don't let your wife or secretary see this, but if they do, tell them it's the way the other half lives. Dr. Erle Henriksen, a gynecologist from U.S.C., says that "at least HALF OF ALL WOMEN ARE REGULARLY TRANSFORMED INTO TENSE IRRITABLE WITCHES. They raise hob with their husbands, children, bosses, and friends." . . . The cause is hormonal of course; it is cyclic; it persists for as long as 6 days; it produces a change in fluid balance, with an excess retention of water in the tissues, with the emotional effects arising from pressures on certain brain centers. The intelligent woman, the perfectionist, suffers most. It contributes to divorces, acts of crime, etc. . . . Dr. H. uses a diuretic (neohydrin, 2 or 3 per day) for his best results.

The Tuberculosis Control Law in Arizona is about a year old. It is hard to get a general view with only one pair of eyes, so we have tried to get five pair, three in Phoenix and two in Tucson. We are very grateful for the frank responses from all of these smart and busy guys, and we'd give them credit-lines if we hadn't promised anonymity. . . . Here is a series of only slightly conflicting comments from Phoenix, — "A good and fair law. It has worked out fairly well. It is just beginning to be accepted by patients and physicians. It looks and sounds good, but has accomplished little so far. . . . Many M.Ds. are hesitant about asking the health department to enforce. Some private doctors drag their feet; it may be honest belief, or bread-and-butter. Lots of cases are wrongfully getting home care. . . . The state, county, and city interpretation of the law differs, but conferences may solve, and a joint city-county health department would help, since most recalcitrants are in the city. . . . There is no 'detention section' in the County Hospital. The Arizona State Hospital has an unoccupied TB section which could be used. Detention acts as a deterrent, and is psychologically effective. A number of people have been quarantined, and the county attorney's office is becoming co-operative and helpful. The law has 'teeth', in spite of criticism, and old laws are supplementary. . . . The source of welfare assistance is uncertain; should it be welfare, or the TB control fund? The County



Meet Mr. George S. Ashley, Jr., HBA's Vice-president in Charge of Insurance Functions. A new arrival to the HBA staff, he will direct the HBA Claims, Underwriting, and Policyholders' Service departments.

Well versed in the field of insurance, Mr. Ashley was formerly Vice-president of a large mid-west Life Insurance Company operating in 31 states. With the firm 4½ years, Mr. Ashley was Director of the Underwriting, Policy Issue and Reinsurance, Claim Division, and Research departments. He also spent 2½ years as Secretary-Treasurer of another mid-west Insurance Company where he gained valuable experience.

Active in community affairs, Mr. Ashley was Chairman of the Board of the Northwest Christian Church in Oklahoma City before coming to Arizona. He is a past president of the Oklahoma Home Office Life Underwriters Association and a member of the Oklahoma City Chamber of Commerce. He also served as a zone director for the annual Medical Research Foundation Fund Drive.

An Air Force veteran, he is the father of four children.

We are pleased to welcome Mr. Ashley to the HOSPITAL BENEFIT ASSURANCE staff, and his family to Arizona.

Hospital grabbed the funds intended for patients outside the hospital. . . . Several counties are now organizing health departments, and will then be able to use the law. . . . Tucson is resisting the law!"

Here are the comments from Tucson: "The local health officer will not use the law; the reason given is the lack of isolation facilities. The health department says: 'TB has been here a long time; let's not get excited.' There is no real hurry, since it took California years to edge in on the problem. . . . The health department has not accepted help from M.D.s. The county attorney is willing to help if asked. The parent-teacher groups are becoming more demanding, due to skin-test programs. Some legislators are interested in TB control. The early 'violation of rights' cries have subsided, and they came from an anti-medical source. . . . Not enough money has been appropriated; it is used only for hospitalization. An active state TB control officer is needed (Feb. '57). Tucson is watching the Phoenix experience."

It would seem that the situation sounds possible, will take time, will require men (and women) of good will.

Capsule news item: A California osteopath, charged with FALSIFYING NARCOTIC PRESCRIPTIONS, claimed it was due to spelling errors. The D.A.'s. complaint also contained spelling errors. Verdict, not guilty. . . . He had written 75,000 narcotic prescriptions in his career. It didn't say how old he was.

STAFFORD WARREN is noted as the chief of radiological safety in construction of the atomic bomb, and versatile enough to have been founder and dean of the medical school at U.C.L.A. He has recently given his ANALYSIS AND CLASSIFICATION OF MEDICAL GRADUATES to a reporter for MEDICAL ECONOMICS. The article makes good reading. . . . Each new doctor tends to be one of three basic types: A MECHANIC, A SCIENTIST, OR A HEALER. . . . The "mechanic" isn't really interested in pure science, can't understand it very well, and got through school by a strong personality and ability to memorize. He can do a good, busy, safe job with a smile, contact with drug detail men, and a copy of Merck's Manual. He won't grow much, but he is accurate in office diagnosis and handles patients very well with his aggressive manner and knowledge of human relations. He will usually be popular and give medicine a good reputation. . . . The "scientist" may go into practice, where he does clinical research, but he more often works for medical schools, pharmaceutical companies, or community agencies. He must know HOW a case differs from others, WHY a drug works, but he lacks the ability to handle people. . . . The true "healer" derives something from both other types. He makes a clinical analysis, arranges for tests, and makes the diagnosis. He differs from his mechanical colleagues in that he understands medical science;

he differs from the scientist in that he knows and likes people; he also has the ability to get people to do what is best for themselves. . . . The mechanics may be increasing in number. The type of a student may be somewhat determined by noting his scientific curiosity, his optimism, his flexibility, his idealism, his horse sense, his integrity, his warm-heartedness, says Dr. Warren.

Every now and then a diagnostic method is described which sends a chill down the spine of the average physician to whom an intravenous puncture is an adventure. Gwathmey ("the Younger," son of "Twilight Sleep" Gwathmey) has reported the INSERTION OF A NEEDLE INTO THE LEFT ATRIUM so that pressures may be obtained. (Medical Annals of the District of Columbia). . . . This is quite simple, except for the simultaneous insertion of a catheter into the thoracic aorta (or a needle into the brachial artery), and except for the strange portal of entry — the lengthy needle is inserted through the back, at the eighth or ninth interspace, lateral to the vertebral body, through the mediastinal structures. . . . The fears of us non-adventurous people are somewhat justified by a gem of understatement which follows: "The complications of this procedure are usually not alarming and can be handled with ease. Hemothorax, pneumothorax, hemo-pericardium, mediastinal hematoma, hemoptysis, and pleuritic pain have been reported. There have been only 2 deaths recorded in over 400 cases."

Here is a medical quiz for you to try. Would you or would you not give ANTIBIOTICS to a patient going through major surgery in the hope of PREVENTING INFECTION? I would, but Kaplan, clinical professor of surgery at LSU says "Antibiotics should not be given to clean cases because they will often mask infection." . . . I think antibiotics make a "clean" case cleaner (and who knows how clean a case is?), and it makes a mildly contaminated case less likely to show an infection.

A. L. Blakeslee is a pretty good science writer, although we have lately had reason to be cautious about that kind of reporter. He reports, in a syndicated column, that an amazing new antibiotic may be at hand. 'MALUCIDIN' was discovered by Ivan Parfentjevo of Yale, and the source is a FERMENTED BREWER'S YEAST. It is a protein, and is said to be bacteriocidal or bacteriostatic for fungi as well as bacteria in animals. . . . The odd and additional angle is that yeast does not cause allergies, and the drug seems to desensitize animals which have been sensitized by proteins. . . . This could be, if confirmed, a platinum instead of a "silver bullet." It may be OK at Yale, but let's see what Harvard thinks of it.

H. P. Muller of Berkeley, Calif., is not only a well-known orthopedic surgeon, as well as head

PHYSICIAN of the recent U. S. OLYMPIC TEAM, but he is part of the "longest forward-pass" combination of Muller and Stevens (Brodie Stevens is a noted chest surgeon). . . . Apparently the trouble they had in Australia, and had to hide to avoid the appearance of alibis, was really something. Most of it came from the cold, windy, damp weather, with respiratory infection, arthritis, hay fever and asthma, etc., as a result. . . . Also, champs are not completely free from tension and worries. The British trainer said he used 95 per cent psychology and 5 per cent drugs, but the English doubtless thought Australian weather was nearly perfect.

"Oh doctor, what can I do for my BRITTLE NAILS?" Probably it might be wise to think of metabolism, and fungus infections, and possible esoteric methods of therapy, but the Knox Company has its own answer, — "The ONE way to help splitting nails which has been proved by published medical research is the tried and true Knox Gelatine!"

Here are some items on the use of ANTI-TB DRUGS which were gleaned at a Las Vegas meeting from Roger Mitchell of Denver. (Denver has again become a fairly hot clinical and laboratory research center in the past few years). 1. Isoniazid should be given in very large doses to most people. The blood level may be tested by a new biologic test. The dosage can be 15 to 20 mg. per kilo of body weight, or a total of 900 to 1600 mg. (compared with the usual total dose of 300 mg.). . . . 2. High doses of isoniazid may produce an acute neuritis. The neuritis can be prevented by 100 mg. per day of vitamin B 6 (pyridoxine), but it is hard to cure once it occurs. . . . 3. Pyridoxine is now available to druggists at 1.8 cents per 25 mg., whether your druggist knows it or not, and the cost per day should not exceed 10 to 12 cents. . . . 4. PAS (para-amino-salicylate) is very necessary in preventing bacterial resistance to isoniazid and streptomycin. It also prevents acetylation of isoniazid in the blood, or a deterioration of the effective, non-acetylated form of isoniazid. . . . The Denverites make this work sound good, and it should become fact (although it hasn't).

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TAX DEFERMENT FOR THE SELF-EMPLOYED

(Jenkins-Keough Legislation)

By L. D. Sprague, M.D.

PRESENT tax laws discriminate against 10 million self-employed taxpayers. High taxes and high living costs make it unduly difficult for the self-employed man or woman — you, yourself — to create an old age retirement program out of current income. At the same time, millions of our fellow citizens find that present income tax laws help them retire. By working for others, rather than for themselves, they participate in employee's pension plans. The internal revenue department deems moneys paid into these trusted or insured plans by an employer as a business expense and as such constitutes a business deduction for him. Even greater benefit accrues to the employee since he does not have to pay any income tax on his company's contribution until the benefits are actually paid. This of course is usually after his days of high earned income are past and lower tax rates, if any, would then apply.

The American Medical Association has banded together with six other organizations to push passage of the Jenkins-Keough bill which would authorize physicians and other self-employed to defer income tax payments on earnings put into retirement or annuity programs. The tax would be payable when retirement benefits are received and the tax bracket is presumably lower. This organization is spearheaded by the American Bar Association and is called The American Thrift Assembly. The national chairman is F Joseph Donohue, a lawyer, of Washington, D. C. The Washington field office is located at 1025 Connecticut Ave., N. W., Room 612, Washington, D. C. Other organizations co-operating wholeheartedly, in addition to the AMA and ABA are: The American Dental Association, American Institute of Accountants, National Association of Retail Druggists, National Association of Real Estate Boards, and the American Retail Federation.

The fair tax principles embodied in the Jenkins-Keough bill have been before congress for more than a decade. Such legislation would promote long term savings, a fundamental factor in combating inflation which now constitutes a great threat to our economic stability and real

prosperity. Industrial growth is a sine qua non for the maintenance of prosperity. Financing of such growth can be done without inflation only if and when the supply of long term savings equals capital demands. For some time capital demands for factories, houses, roads and public facilities have been far greater than the amount of savings available for these purposes. Short term financing credit supplies an answer, but stimulates inflation. The present tight money market reflects the excess of capital demands over available long term savings. Such savings can be placed at the disposal of industry, trade and construction by institutional investors to meet the capital demands and thereby act as a real deterrent to inflation by assuring a steady and stable growth of capital. The greatest virtue of the Jenkins-Keough bill is that it represents one of the soundest means of encouraging long term savings.

The Jenkins-Keough bill (H.R. 9 and 10) allows a self-employed person to deduct from gross income each year a limited amount of self employment income contributed by him to a restricted retirement fund or paid as premiums to purchase an insurance policy with retirement features. He can deduct annually up to \$5,000 or 10 per cent of self-employment income, whichever is less, but not more than a total of \$100,000 during his lifetime. There's a five year carry-over of unused deductions, subject to certain limitations. An individual who has reached age 50 before the effective date, is allowed to deduct an additional amount, to help him build up an adequate interest in the fund or obtain more than a token annuity. In his case, the normal deduction limit is increased by one-tenth for each year of age over 50 and not over 70. The contributions, plus accumulations, become taxable when distributed, and may be withdrawn at any time. However, where withdrawals take place before age 60 the tax is 10 per cent greater than otherwise payable, but the payment is treated as having been received pro rata during the taxable year and the four preceding years. Lump sum payments after age 65 are given special treatment.

At present, government is discouraging self-employment and individual self-reliance by imposing heavy progressive income taxes (one of the basic principles of Marxism) and by failure to provide any practical provision by which the self-employed can save money for catastrophic

periods and for old age. It is vital in a constitutional republic such as ours to have a large class of self employed, professional men, doctors, lawyers, dentists, architects, artists, artisans of all kinds and individual business men who work for themselves. It was this type of citizen who, in the early days, made this country great, who drafted our Constitution, conquered the wilderness and won the West. If we still want to develop this self-reliant type of man, we must provide him with a fair opportunity to succeed at his chosen work and not handicap him so by taxes that he chooses the status of an employee of others.

Jenkins-Keough legislation is embodied in H.R. 9 and 10 and at present writing is in the hands of the House Ways and Means Committee who reportedly are in favor of the bill. This bill should be reported out of committee so that it can be acted upon by the house and senate. Passage at this session or at latest in the next session, can be greatly enhanced by your own individual effort. Organizations, such as the American Thrift Assembly, can do much and will be actively pressing for enactment of the bill. In the last analysis, however, it is individual action that counts the most. Your own individual communications to the members of the House Ways and Means Committee and to your congressman and senators will provide the impetus for passage. You will be the recipient of the benefits of the bill primarily; all America would benefit from its provisions. Let's assert ourselves; let's support those who support themselves!

Chairman of the Ways and Means Committee is the Hon. Jere Cooper, address — House Office Building, Washington, D. C. Write to him asking that the Jenkins-Kcough bill be reported out of committee and favorably supported. Send copies of your letter to Representatives John J. Rhodes and Stewart L. Udall and to Senators Barry Goldwater and Carl Hayden.

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MEDICAL WELFARE

Cost of Medical Care in the U. S.

WHEN THE various parts that go into the nation's health bill each year are added up, the total is staggering. Estimates of private and public spending include the cost of everything from patent medicine and toothpaste to surgeons' fees. Private care for the country in 1955 was placed at \$11.2 billion, while public care (federal, state and local) was estimated at \$3.9 billion. The following figures for private care costs are for 1955.

\$3.4 billion for physicians' charges.

\$3.7 billion for hospital charges.

\$2.3 billion for charges for drugs and appliances.

\$1.8 billion for other charges, including nursing, etc.

Health and Medical Resources

The medical "plant" that provides the country with the finest care of any nation is equally impressive when viewed statistically. In one area, that of medical school graduates, bare statistics fail to tell the whole story. They do not, for instance, reflect the increased utilization of physicians' skills and the advance of medical knowledge in treatment of patients.

225,579 physicians in U. S. in January 1956.

1,604,000 hospital beds in U. S. in 1955.

430,000 professional nurses in 1955.

300,000 practical nurses, attendants, nurses' aides in 1955.

4,735 medical school graduates in 1930.

5,275 medical school graduates in 1940.

6,135 medical school graduates in 1950.

6,845 medical school graduates in 1956.

Voluntary Health Insurance

Another development of great importance in the furnishing of medical care has been the growth of voluntary health insurance. Twenty years ago, the number of persons covered by some form of health insurance was only 1.5 million. When the drive was on for compulsory health insurance in 1949, just over 50 million persons were covered by voluntary insurance. Organized medicine contended then that voluntary coverage would expand, thus obviating the need for government insurance. The figures below prove this was a good estimate of the situation.

110 million persons now covered for hospital charges.

92 million persons now covered for physicians' charges for surgery.

55 million persons now covered for physicians' medical charges in hospitals.

10 million persons now covered for physicians' home and office call charges.

10 million persons now covered for major medical expenses (catastrophic) compared with 1.2 million covered in 1953.

Public Assistance

A part of the Social Security Act, but a separate administrative operation, the public assistance program also was enacted in 1935. Its basic purpose was to assist states in providing subsistence for destitute families. From the beginning, the states have contributed a portion of funds for the various categories of recipients. Federal appropriations 20 years ago were about \$209 million annually. Now they have increased more than seven-fold, so that the appropriation for the current fiscal year approximates \$1.5 billion. There are four programs: aged, blind, permanently and totally disabled, dependent children.

Until amendments last year, unspecified federal-state funds were paid out for medical services of the needy. An educated guess has been that between \$90 and \$100 million of federal money has been going into such medical payments. A more accurate estimate should be forthcoming as a result of the 1956 amendments. These amendments set up a new category of federal-state payments for medical care over and above the old subsistence payment limits, with medical payments going directly to the physician, hospital, druggist, clinic or nursing home.

5.1 million persons get monthly public assistance checks — medical costs included.

Under new law, direct medical payments are to be made in behalf of assistance recipients to physicians, nursing homes, hospitals, and for drugs. These direct payments will probably exceed \$200 million and could reach \$230 million by 1958.

Veterans

Another vast program with high demands on the federal budget is that for veterans' medical care. The policy of the federal government is that wartime veterans with service-incurred disabilities are entitled to the best medical and hospital care that can be provided. The Ameri-

can Medical Association supports this policy. Congress in June 1924, authorized VA to admit indigent non-service-connected veterans when there were spare beds. By 1957 roughly 75 per cent of all cases treated in VA hospitals were for injuries and diseases not originating during, or aggravated by, military service.

Now the problem is becoming more complicated as the veteran population grows older (World War I veteran in VA hospitals averages age 62) and becomes subject to chronic illness. Demands increase for use of VA facilities. Today VA requires: A full-time staff of over 4,600 physicians; 2,247 residents; 11,000 part-time consultants; and thousands of doctors on a contract basis for the agency's home-town care program.

22,599,000 total number of living veterans as of January 1957.

121,865 total number of VA hospital beds as of January 1957.

111,540 number of patients in VA hospital facilities on an average 1957 day.

\$619,614,000 will be spent by VA for in-patient care in fiscal year 1957.

\$82,638,000 will be spent for out-patient care in fiscal year 1957.

More than two out of three veterans treated in VA hospitals are treated for non-service-connected conditions.

THE DOCTOR'S SON IN MEDICINE

By Louis G. Jekel, M.D.

Phoenix, Arizona

SHOULD YOUR son become a physician? Should you urge him, or try to influence him, or force him to do so? What factors would help you decide? What questions must first be answered for you?

Does he qualify? What are the qualifications for success in medicine? Actually, general qualifications for success are much the same in all fields. I shall list, although not necessarily in the order of importance, the characteristics which I think qualify one to become a doctor.

Appearance. To be a doctor one need not be an Adonis. In fact it might be better not to be the matinee-idol type. Nevertheless, it is desirable to possess a normally shaped body and a physiognomy that at least is not repulsive. One should be rather normal.

Physical ability. In certain fields a doctor is called upon to exert a considerable output of physical energy. He need not be a champion athlete, but he must be able to cope with the strain of long and constant working hours and irregular and interrupted periods of rest. He must have stamina, and he should not be possessed of physical handicaps which would render him incapable of carrying out his duties.

Personality. Anyone in any field of endeavor may go further with a pleasing personality. Thus a doctor may be able to gain and hold his patient's confidence and control the diagnostic and therapeutic program better if his manner is pleasing. Call it "bedside manner" if you wish. Remember, however, that here I refer to an innate characteristic, not an acquired one, a trait which may be improved upon through conscious effort, but which nevertheless is a natural characteristic.

Native intelligence. This characteristic is concerned with the ability to learn. But it also has to do with that vague inborn trait of doing and saying the right thing at the right time. Again I am considering a characteristic which, although inborn, can be improved upon through individual effort.

Ambition and industry. The candidate for a medical degree is required to exert a tremendous mental effort. He must be ambitious and industrious and he must ever reach for that elusive goal at the end of the long row. Is he willing to make the necessary sacrifices? If so, he probably possesses the necessary ambition and industry to practice good medicine.

Honesty and integrity. This is perhaps the most important characteristic required of the physician. Honesty and integrity, above all, in the professional and financial dealings with his patients and his colleagues, and also intellectual honesty in dealing with scientific matters — these things are musts for the doctor. The traits of honesty and integrity will, if present, be apparent early in life. They must be apparent in a boy before one encourages him to become a physician.

The life-long training and environmental background of the physician's son may be a factor of importance. In his general up-bringing in a doctor's household, the physician's son naturally is thrown into contact with medical matters and the doctor's way of life, and he will have some

training in these matters. He will have some idea what it is like to be a doctor, a factor which probably would be an advantage to most young persons.

Other things being equal, then, is the son of a physician more likely to become a successful doctor than a boy from a non-medical family? The answer is probably yes, for the member of the doctor's family has had a life-long contact with the profession, knows from childhood what is expected of him, and knows what to expect from the profession. So it would be a matter of great experience, and in that manner alone could one expect the doctor's son to have a slight advantage over someone else — other things always remaining equal.

Would the medical profession stand to gain from having a doctor's son in its ranks? Would the profession stand to gain by having generation after generation of doctors' sons join it? Probably not — other things being equal. Any group may profit at times from an infusion of fresh blood. And if the profession can continue to attract good men, it will make little difference whether these men came from doctors' families.

Would there be advantages or disadvantages to society at large? Once again I believe the answer is no — other things being equal. Society and the profession need good men as doctors, and it makes little difference whether these men come from medical families.

Finally we come to the question: What would be the advantages or disadvantages to the individual?

The physician, in the course of his daily duties, may derive tremendous personal satisfaction from being a useful citizen and helping his fellow man. By being a useful citizen I do not mean that the physician must be the most "civic minded" person in town. He does not have to be the leading political figure, the mayor, or the congressman. He does not have to be an elder in the church. He does not have to be district governor of the service club organization. He may well be any or all of these, and he may do a fine job. But, by and large, he can do the most good, I am sure, by being a good doctor. And it is from his medical work that he can derive the greatest personal satisfaction.

Related to personal satisfaction is the esteem in which one is held by his fellow-man. The physician is usually a leading citizen — again

because he is a physician and not because he has his finger in every civic pie. He has the opportunity to become, and usually is friend and benefactor to a large number of persons. These persons come to admire, and often revere him. Naturally, he derives a good feeling from this admiration.

The doctor may enjoy intellectual satisfaction. Medicine, being both an art and a science, presents untold opportunities for study in any of a number of different fields. The physician, by pursuing such studies can satisfy any degree of intellectual urge. The resulting compensation and gratification can be a source of great joy.

A physician has social advantages open to few other individuals. Let me hasten to say that I am not speaking of his opportunities to belong to the best country club. Rather, I am referring to the fact that he has access to almost any group. Because he is looked up to as an intelligent, honest, thoughtful person, he is considered to be an interesting person who makes good company. He is desirable. He can fit himself into almost any group. If he happens to choose the country club set, fine. But if his preference is for the church group or some other group, he will be made welcome. He can choose his social life to suit himself.

Finally, let us consider the financial reward that may be expected by our aspiring Aesculapiad. I deliberately place this point last because it is the least important consideration and should be so considered by the young man who plans to enter the field of medicine. Any good doctor (that is one who is reasonably intelligent and reasonably well-trained and who is reasonably industrious) can, anywhere in the United States, expect to have a substantial income, an income which will be somewhat greater than the average of his fellow American. Some doctors have large incomes; some do rather poorly. Any way you look at it, money-making is not the doctor's business; his job is to be a physician. Primarily he should be concerned with offering his patients good medical service. Secondly, he should be concerned with providing for himself and his family. If he does a good job as a doctor, the money matter will take care of itself. If he wants to be a millionaire, he should enter some other field of endeavor.

So, in the end we come to this point: Two questions must be answered. Is the boy fit for the job? Is the job suitable for the boy? The boy

should understand what he faces and what is expected of him. He should also know what he may expect to receive in return for his efforts. He should be given all the help he needs to enable him to learn these things. But he should not be forced or coerced. He himself should make the final decision.

For what it is worth, I shall make this comment: I am not sorry that I chose medicine as my life's work.

NEUROLOGIC AND PSYCHIATRIC ASPECTS OF THE DISORDERS OF AGING, Vol. 35 edited by J. E. Moore, H. H. Merritt and R. J. Masselink. 307 pages. Illustrated. (1956) Williams & Wilkins. \$8.50.

The "century of the child," as ours once was called, bids fair to become the century of the elderly, and we need all the information we can get from the young science of old age. The proceedings of the Association for Research in Nervous and Mental gives us the first book devoted entirely to the geriatric aspects of the central nervous system. You can be sure the association has brought together the most seasoned workers in a wide field, in providing excellent original and review articles. Refreshing in every sense, this one is for specialists and nonspecialists alike.

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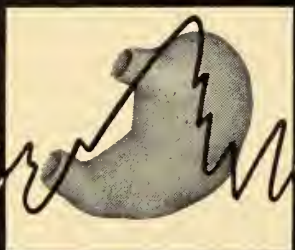
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Organization PAGE

CIVICS

By Norman A. Ross, M.D.

U. S. PUBLIC HEALTH SERVICE COMMUNICABLE DISEASE CENTER FOR ARIZONA

IT WAS our hope that final decisions, even signing of the contracts, would be completed prior to submitting this page. However, though plans, drawings, and specifications are in process, this is not the case.

The public health service responsibilities and activities among the Southwest's reservation Indians, as well as other studies (note the recent coccidioidomycosis conference in Phoenix) have caused this governmental agency to recognize the need of a communicable disease center in either New Mexico or Arizona.

The most that can be said now is that there is a possible date for public announcement prior to the end of the fiscal year which is July 1, and Arizona is very much in the picture.

* * *

From the American Medical Association
News Letter

Federal Medical Welfare Picture: The special report under date of March 7, 1957, attempts to do three things about this. First, it collects in one document and from original sources the most important statistics involved in a federal medical welfare program; second, it relates data to specific programs and describes the purpose of the program. Third, it presents statistics in an easy-to-use form. We have studied this letter intensely. We can attest to the above which is taken nearly verbatim from the introductory letter to this report.

Statistics, such as 571 measures introduced related to health legislation in 1955 and 1956 in the 84th congress, are impressive. The fact that most of these, of course, did not get past committees indicates the scrutiny to which these measures are subjected by our congress in protecting the health and welfare of the public.

The Medical Dependents Act, voted last year,

completes the present federal medical aid picture, which provides at least some degree of medical care at low cost from the federal government to one out of every four persons as follows:

22,599,000 living veterans as of January 1, 1957.

5.2 million military personnel and their dependents.

300,000 beneficiaries of the public health service, including 200,000 seamen, but excluding beneficiaries of Federal Employees' Compensation Act, and Indians.

5.1 million Indians and Alaskan natives receiving care in 56 federal hospitals or in private facilities under contract.

4 million beneficiaries of the Federal Bureau of Employees' Compensation Act (at-work injuries only).

Our present federal medical program is not limited to persons within the United States as evidenced by the following:

Foreign economic aid programs (entirely U. S.) and the World Health Organization (U. S. largest contributor) give limited health care in 92 foreign countries. Example: 25.3 million children were vaccinated in 1956.

The immediate future expansion, now in the mill:

A proposed program for federal employees and their dependents would add an additional 7 million.

THE MARCH 29 MEDICAL ASSOCIATION NEWS LETTER CONTAINS THE FOLLOWING STATEMENT:

Surgeon General Burney has appointed a committee of seven physicians to advise him on U. S. Public Health Service activities related to the practice of medicine. In making the announcement Dr. Burney said:

"We have many groups advising us on research and disease control. With growth of medical and related research, it is increasingly important that we work with private physicians

as well as health agencies to help apply the new knowledge promptly and effectively. Our new committee will be of great aid in this and in advising on activities of PHS which bear directly or indirectly on the practice of medicine. We are very grateful to have the advice of this distinguished group of physicians."

The membership of this group is impressive, but we would doubt that this will mean curtailment of federal medical activities.

The April 12 letter announces that the administration offers its aid to medical school bills.

The April 26 letter presents the differences in the administration's aid to medical school proposals as that compares to a bill, S. 1922, which has been introduced by Democratic Senators Hill, Neely, Humphrey and Smathers. The differences are as follows:

1. The administration bill would amend the present three-year, \$30 million a year program for research construction grants by increasing it to a total of \$225 million to be used over the next four years, and for grants to help build teaching as well as research facilities. The Democrats would leave intact the present research grants program of \$30 million a year for three years, and in addition would provide \$60 million a year for five years for teaching facilities, or a total of \$390 million.

2. Under the administration bill, the U. S. contribution could not exceed 50 per cent of the research or teaching project cost. The Democrats also call for 50-50 matching, except that the U. S. would increase its share to two-thirds under two conditions: (a) if the school gives assurances that its freshman class would be increased by 5 per cent, and (b) in the case of new schools.

3. The administration bill would expand the present research advisory committee and make it responsible for screening teaching as well as research construction projects, whereas the Democrats would set up a new 12-man committee, with half its members from the medical or dental professions.

In view of the one-to-four ratio of federal medical care, we suggest that the following be read and compared with local hospital and medical association health insurance programs:

THE APRIL 26 LETTER:

AHA PLAN FOR U. S. EMPLOYEE HEALTH INSURANCE INTRODUCED:

Introduced by Rep. Chet Holifield (D. Calif.), the American Hospital Association's bill for health insurance for federal employees now is before the House Post Office and Civil Service Committee. It is H.R. 7034. The bill would offer U. S. civilian employees both basic and major medical coverage, with U. S. paying part of the cost. Payroll deductions, which so far have not been approved by the White House, are provided. About 2 million employees and an equal number of their dependents would be affected. Major provisions of the bill:

1. The civil service commission would negotiate two types of basic contracts for nationwide use, one offering service benefits for doctors'-in-hospital charges and hospitalization, and the other offering indemnity benefits. In the indemnity contract, hospital payments would have to be sufficient to meet the cost of hospital care.

2. Employees would have a choice of service or indemnity basic coverage, or federal employee association or group practice arrangements.

3. Major medical or catastrophic coverage would be available.

4. The U. S. would match employee payments up to a maximum of \$2.17 for employee only, and \$5.42 for employee and family. Thus if the cost of basic insurance for a family came to less than \$10.94 per month, the balance of the U. S. contribution could be applied as matching money to help pay the cost of major medical coverage. It is estimated the U. S. would pay about 40 per cent of the total health insurance costs for employees taking out both basic and major medical policies.

It is expected the post office and civil service committee will defer hearings at least until the administration's bill has been introduced.

* * *

From time to time we quote from, and comment on, American Medical Association's Washington News Letter, the distribution of which, we have been informed, is quite limited. Our purpose in doing so is to not only call your attention to matters presented, but to stimulate interest. We have been informed that requests for individual letters can be addressed to:

The American Medical Association
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1523 L Street, N.W.
Washington 5, D.C.



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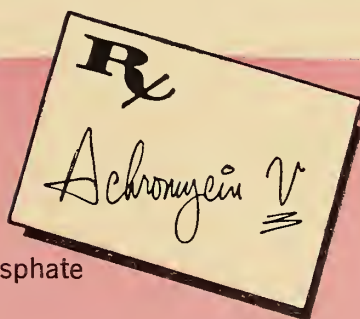
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AUTOMOTIVE CRASH INJURY RESEARCH

FOR THE past two years, a study of injury-producing automobile accidents has been conducted in various selected sampling areas in Arizona. The study is unusual in that it is primarily concerned with determining the specific causes of injury to occupants of passenger cars involved in accidents. Prior to the inception of the Automotive Crash Injury Research program, only the causes of accidents were investigated and reported; causes of injury were ignored.

The Arizona program constitutes a co-ordinated effort on the part of the Arizona Medical Association, the Arizona Highway Patrol and the Arizona Department of Health, in co-operation with the Department of Public Health and Preventive Medicine, Cornell University Medical College, New York.

Last year, over 40,000 persons were killed and over 1,350,000 injured, more than 100,000 permanently, in automobile accidents; approximately 75 per cent were occupants of passenger cars. If the present trend continues, the National Safety Council estimates that in 1966 there will be 53,000 deaths involving 83 million cars, and a corresponding increase in injuries.

While the Automotive Crash Injury Research program favors every realistic measure directed toward the prevention of accidents, and there is still much to be done in this field, it recognizes at the same time that, as long as human nature remains a factor in the accident equation, the occurrence of accidents can be controlled but not eliminated. Education, for instance, can do much in cautioning a driver to abandon the wheel when his reactions are inhibited by fatigue, but, in the final analysis, the decision, when left to the individual, may well lead to imprudent judgment and result in a serious accident, often exposing other more prudent drivers and innocent passengers to injury and death. Improved engineering of highways with controlled access and well divided opposing traffic lanes reduce the chances of many types of accidents, such as the two car head-on collision, yet accident records of the best super highways in the country would seem to indicate that, as long as human nature remains unchanged, many accidents will continue to be caused by carelessness, inexperience, emotional

instability, drunkenness and fatigue.

Automotive Crash Injury Research, however, has demonstrated that the inevitable accidents can be productive of fewer crippling and fatal injuries. To this end, highway accidents are analyzed with a view to learning how to build more safety factors in automobiles.

The study of injury causes in automobile accidents, from its inception, confirmed suspicion that many persons are being killed unnecessarily. As might be expected, the body area most frequently injured is the head — 71 per cent of injured persons sustain an injury in this area. In the study of human tolerance to force, it was observed that common structures, such as certain aircraft instrument panels constructed of light gauge metal which would deform under impact, absorbing much of the energy, could be struck by the head at impact velocities of 40-50 miles per hour without causing skull fracture, loss of consciousness or subsequent evidences of concussion. The distribution of force in time and area and the physical principles of pressure compensation provide these astonishing examples of protection.

Participation by Arizona medical and police groups, combined with participation by similar groups in other states, has made available data which has formed a basis for the development of engineering improvements which are specifically designed to reduce or moderate injury if an accident occurs. In addition, data produced by the interstate program promises to implement medical treatment of auto crash victims through more definite knowledge of the nature and scope of the problem. The trauma committee of the American College of Surgeons has expressed great enthusiasm in this project.

On June 1, the study was conducted on rural highways state-wide, but was limited to 1956, 1957 and 1958 passenger cars.

Physicians and hospitals were asked to co-operate in this vital approach to the national problem of automobile fatalities and injuries. The continued study will help to evaluate the effectiveness of safety design changes in late model cars, such as improved door-holding mechanisms, energy-absorbing steering wheels, seat belts and interior padding. Studies of post-1955 automobiles involved in accidents already indicate, for example, that occupants of these cars are experiencing a 29 per cent reduction in the risk of dangerous through fatal grade in-

jury. A preliminary evaluation of improved door locks designed to decrease the incidence of ejection (commonest cause of injury in accidents) shows that, in the injury-producing accidents studied, post-1955 models experienced approximately 27 per cent less incidence of front doors opening during accidents than did pre-1956 models. A direct result was an approximate 50 per cent cut in the frequency of occupant ejection.

Occupants of these newer model automobiles have been found to sustain nearly 30 per cent less dangerous to fatal grades of injury. Such decrease is attributable, in large measure, to the fact that doors remained closed, but also, in part, to design improvements in the interior of many new cars.

It has also been demonstrated that properly engineered and installed seat belts can provide a remarkable degree of protection. The most marked improvement was seen in the prevention of ejection and its associated injury risks. Although continuing studies are expected to increase the knowledge of the precise degree of added protection a seat belt may be expected to afford, present findings show that their use can reduce injury rates somewhere within a range between 30 and 60 per cent (depending on the type of accidents and other factors).

Medical and accident data-collecting methods operate in the following way: All 1956, 1957 and 1958 passenger cars involved in accidents occurring within the state, but outside the limits of municipalities, come within the scope of the study. Immediately following the accident, the Arizona Highway Patrol officer in charge submits to the physician or emergency room chief or coroner a special medical report form furnished by Cornell. These brief forms are designed to include a description of the extent and nature of all injuries. Completed forms are mailed to the Arizona Department of Health. Here, medical reports are matched with information supplied by the investigating highway patrolman concerning specific causes of the injury, as well as accident and car damage details and special photographs thereof. Completed cases are then forwarded to Cornell University Medical College for analysis and statistical use.

These studies are sponsored by the Armed Forces Epidemiological Board through its Commission on Accidental Trauma, with funds supplied by the Surgeon General of the Army, by

the Division of Research Grants of the United States Public Health Service and by grants of unrestricted funds by the Ford Motor Company and the Chrysler Corporation.

VETERANS' ADMINISTRATION PRIVATE PRACTICE?*

NUMEROUS examples can be documented of veterans' administration hospitals admitting and treating non-indigent patients for conditions having no possible connection with service in the armed forces.

The writer recalls several cases of hernia, incurred under coverage of the Workmen's Compensation Act of Texas, wherein the employee received a lump sum settlement including surgical fee, hospitalization expense and compensation for the convalescent period at the maximum weekly rate. When re-examined some six weeks later for return to duty, and found to have a good and strong repair, such cases readily volunteer the information that the surgery was done at the local VA hospital. And when asked how they were eligible for VA treatment, since they claimed their disability to be due to recent industrial employment, and had been paid for by private industry, the answer is almost invariably a surprised-that-you-ask, "I am a veteran."

The surgery is nearly always good, since it is often done by some of our well-trained colleagues who do private practice in honest competition, and on the side do part-time two afternoons or days per week of staff work at the local VA hospital for fees of \$25 to \$50 per afternoon or day. It is possible these private practicing, part time VA colleagues don't do all of this surgery, but it is reasonably certain that VA authorities will not rush in to prove that much of it is being done by residents in training. It has been a long haul for the VA to sell the veterans on the fact that they are getting the best surgical, medical and dental care and the best social and other care.

Now comes an incident of such concern to all practicing physicians. And the principle involved is of importance to every citizen of any occupation whatever.

A VA hospital in Texas has presented a bill of \$1,569 to a small industry's insurance carrier for services to an employee injured on duty

*Reprinted from the Houston, Texas Medical Record and Annals, March 1955.

in the small industry. The bill states it is for the first 54 days' stay, and among the itemized parts are:

1. Anesthesia, \$40.
2. Operation, removal of herniated nucleus pulposus bilaterally without laminectomy; spinal fusion, L5 to sacrum, \$562.50.
3. Board and room to date, 54 days at \$14.75 per day, \$796.50.

In an accompanying letter and interim summary, the VA hospital registrar shows full knowledge of the fact the veteran is not indigent, his condition is not service connected, but is a responsibility of an insurance carrier under the Workmen's Compensation Act of Texas, and knowledge that the insurance carrier has already initiated treatment at the hands of private physicians of its choice.

The patient had strained his back in the course of his employment in a small city and had gone to a chiropractor for treatment. Upon being given notice of injury, the carrier had the man removed to a larger city and placed under the care of a qualified orthopedic surgeon. The surgeon admitted the patient to a private hospital and began conservative treatment of traction in bed after routine x-rays, physical examination, etc. He also had consultation with a qualified neurosurgeon who noted the low back complaint, with pain in one buttock and thigh posterolaterally, but with no change from the normal in reflexes and no paresthesia. The neurosurgeon concurred in the continuing of conservative treatment.

After 10 to 14 days in the hospital, the patient was allowed to go home, and was returned for treatment two weeks later. Readmission to the hospital was advised, but the patient refused. He wrote shortly thereafter that he was improving, but the next time he was heard from was after he was accepted in the VA hospital where after a four week period of conservative treatment, he was operated upon.

The VA hospital advised it has placed a lien on "any benefits that are due this veteran to pay the cost of his hospitalization here," and had its "chief attorney" file its claim with the industrial accident board.

From a study of this record, several conclusions must be drawn:

1. The so-called pauper's oath for veterans presenting themselves for treatment of non-service connected disabilities is knowingly dis-

regarded by some VA hospitals.

2. The federal government, through its VA hospitals, is practicing medicine and surgery on individual, private, non-indigent patients, and is charging fees out of proportion (in their total) to what is ordinarily charged for similar services to a person covered by the Workmen's Compensation Act of Texas.

3. In listing the surgeon's and the anesthesiologist's fees, \$562.50 and \$40 respectively, the federal agency is either exploiting its full-time or part-time surgeons, or is paying them huge sums, while the taxpayer is paying for the operation of the hospital. Industry, through its insurance payments and taxes is, therefore, paying twice for one service.

4. In not communicating with the fully capable orthopedist and neurosurgeon who had begun treatment of the patient and in no way had relinquished his care, the VA showed poor professional practice, and the following borders on the unethical: A part of the VA history, published to the carrier and to be a part of the record before the industrial accident board, contained the derogatory phrases, "His treatment consisted of skin traction — and numerous pills of various sizes and shapes," and "became dissatisfied with his private physician and released himself from their care."

5. The federal government, through its VA authorities, is showing a total disregard for a ruling of the Industrial Accident Board of Texas in treating without authorization a case for which the carriers had already obligated themselves to furnish treatment through capable surgeons of their choice and in a private hospital.

Is it not time for county medical societies to take action along the only lines that can stop this well-advanced phase of federal practice of medicine? We, as local society members, aided whole-heartedly in the early phases of the present VA program when, just after the war, the great majority of patients had genuine service-connected disabilities, and we, as veterans, felt it our duty to help.

We should now fight just as energetically a bureaucratic system that is actually using some of our private practicing members and our medical school deans in a way that will surely destroy the private practice of medicine if not stopped cold. AMA has already gone on record as opposing these abuses, but can do

little on a national level. It has been belittled as a non-representative bunch of "brass hat" doctors in Chicago and Washington, out of touch with patients' problems. An honorable member of congress recently told us the above was his evaluation of AMA. Are Dr. F. J. L. Blassingame, a trustee, and Dr. John Glen, a delegate to AMA, out of touch with patients? They are, to me, speaking for me in AMA policy-making and execution. After all, individual practicing physicians in component county societies are the AMA.

The measures here proposed will no doubt result in a vicious attack on us locally, with all the influences a federal agency can muster, but we may find unexpected support if we make our position clear and stand our ground. The Houston Chronicle some years ago actually began this battle for us with front page headlines on VA hospital abuses, but we did not follow through. Some action along the following lines is imperative:

1. Request a complete and public census on all cases admitted to our local VA hospital during 1954, with a special reference to service-connected disability and ability to pay for private hospitalization; the cases to be listed by number so as to avoid embarrassment to many.

2. Offer to furnish the personnel for such a survey at the society's expense, if expense of the survey is offered as an excuse.

3. Request our members who are primarily engaged in private practice to sever their connection with VA as soon as legally possible.

4. Request the Houston Dental Society to do likewise.

5. Request our members who are primarily engaged in private practice to discontinue any and all participation in the residency training program of the VA hospitals until all abuses are corrected.

6. Reassert ourselves in the operation of our own city-county hospital for indigents, so that the ancillary services will be the best possible, whether the patients be ex-service men, ex-shipyard workers, or whatever, so long as they need free care.

7. Urge our industrial accident board to continue to disallow VA hospital bills, on the basis of its written letter to our society recently wherein it stated unauthorized medical or surgical expense of a case under its jurisdiction would not be allowed.

8. Urge insurance carriers, group hospitalization companies, etc., to rewrite their policies so as to exclude payment for VA hospitalization expense.

It is later than we think. "Creeping" is not the word for what is happening here. It is more fitting to use the description of our congressman, who said he was glad to see a group of doctors looking so good (at a luncheon). He wanted to remember what we looked like before the freight train (federal medicine) ran over us.

I think the congressman's freight train can be stopped, but only with concerted local action; not by letting George (AMA) do it.

W. H. Hamrick, M.D.

PROGRAMS OF THE ARIZONA STATE DEPARTMENT OF HEALTH

The following article is presented to Arizona's physicians in order that they may know these several points in health education for public health workers of the state.

There will be noted that the physician and the hospital are essential to the preventive health efforts indicated. The individual physician may also find herein items for use in the education of parents, whether patients or adult groups.

THE CHILD DEVELOPMENT CENTER

By Clarence G. Salsbury, M.D.

THE Arizona Commissioner of Public Health THE family physician can use help many times in making a diagnosis of mental retardation. He may need help in giving help to the parents of a child suspected of being mentally retarded. Too often the parents are unable to afford the consultant prices of the psychiatric social worker, the psychologist, and the psychiatrist. The emotional reaction of the parents may make it too difficult for them to carry the many referrals to a suitable conclusion. Getting all these consultants together to discuss the findings of each professional worker is difficult.

The need for the team approach to the diagnosis of mental retardation has motivated the State Department of Health to establish a facility and staff to demonstrate this professional service. The program lies within the field of mental health. It has been more realistic, however, to consider the child in his entirety. A pediatrician has been chosen therefore to give professional services to the patient as well as clinical direction to the program.

Upon the pediatrician rests the total judgment in regard to clinical, x-ray, and laboratory services needed. Upon him rests the final judgment in regard to the consultation services needed. His decisions will be guided in part by the findings and opinions of the members of the team who are dealing with the social studies, the psychometrics, the technics in training, and with the follow-up services in the home.

Three important areas of special studies for some of the mentally retarded children will be vision, hearing, and speech. A child may truly be retarded by reason of defect in these areas. The retardation in such instances need not be mental in etiology. There are therefore provisions for ophthalmologic and otolaryngeal medical consultation. Special studies by a audiologist or, a speech therapist may be indicated in order to determine methods essential to the teaching of the mentally retarded child.

There is orthopedic consultation provided if the clinical director of the project needs this diagnostic assistance. There are neurologic and psychiatric consultation services provided. It has been hoped that a psychiatrist may eventually be established as a part-time professional worker on the staff of the Child Development Center*.

The psychiatric social worker and the psychologist employed to serve on the diagnostic team provide valuable information to assist the clinical director. These health workers provide numerous bases for measuring the progress of the mentally retarded child and the ability of the family and the community to comprehend the needs and capabilities of the mentally retarded individual.

A specialist in the field of training technics is a staff member at the Center. It may take a few daily sessions with the child to enable this specialist to reach a decision in regard to the best methods to train and educate him. It may take many such sessions to ascertain the methods which can best be used by the family and by the agencies responsible for the training and education of the child.

There is a public health nurse on the staff of this project. She assists the pediatrician at the time he is examining the child. This health worker is helpful to the parents of the child and to the public health nurse from the local health department assigned to follow-up services in the

home. There is need for interpreting the recommendations of the diagnostic team. There is need for understanding the actions and achievements of the child as a part of evaluation of parent and teacher actions and achievements in dealing with him.

The clerk receptionist and stenographers, key persons on this staff, have been assigned the same responsibilities of clerk receptionist and stenographers in every professional service. These workers maintain the optimum in public relations and see that all the little idiosyncrasies of the professional workers are respected and that reports and communications are where and as they should be.

REPOSITORY FOR MEDICAL CERTIFICATES

BECAUSE of the tragic losses of educational records and official credentials of physicians resulting from wars and natural disasters in the past, the 10th General Assembly of W.M.A. adopted a recommendation of its council, approving establishment of a central repository for medical records.

This action followed an extended study and consultation with other international organizations, none of which proposed to develop such a project themselves. All agreed it was urgently desirable and pledged their support and co-operation to W.M.A. in developing the plan.

The national medical association in each country is to act as the "receiving agent" for the records of the doctors in that country, to verify such records, and to forward them to the W.M.A. secretariat for deposit. The types of credentials to be legally recognized and eligible for deposit have been established, as well as a system of identification. A repository has been selected. Identification forms and detailed information will be furnished individual physicians through their national medical societies and their component units in the near future.

The central repository project has been developed in accordance with one of W.M.A.'s chief objectives: "To protect the interests of the medical profession." The success of the enterprise will depend on the co-operation of the national medical associations, and ultimately on the participation of the individual doctor whose vital interests this undertaking is intended to protect.

*In addition to these consultants noted, there are provided consultants in the fields of psychology, nutrition, and special education.

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SAFETY OF STORED LIQUID
PLASMA:
A CLINICAL STUDY*

By Paul I. Hoxworth, M.D., Ph.D.,
Walter E. Haesler, Jr., M.T. (A.S.C.P.) B.B.

CLINICAL use of pooled plasma in the treatment of various forms of shock and gastrointestinal diseases has been discarded by most physicians, chiefly because of the high incidence of hepatitis in recipients. Solution of the plasma-hepatitis problem by a method easy to use in blood banks might assist in more general use in clinical medicine.

The plasma pools were prepared from about 72 donors, cultured, and dispensed to final containers by sterile aseptic techniques, and the plasma units were allowed to stand at room temperature for at least six months before release for use.

The survey for incidence of hepatitis began in January 1953, consisting of a follow-up by letter to each recipient and subsequent visit by a graduate nurse to confirm the data reported and to try to locate those not replying to the letter. The data was tabulated and recipients divided into: Group I, who received plasma and whole blood; and Group II, who received plasma only. As a further check, hospital records of all patients in the Cincinnati area with a discharge diagnosis of hepatitis since July 1952 were examined (infectious hepatitis was included), together with all cases reported to the health department, and these lists compared against the complete list of plasma recipients.

The results in the two groups of cases were as follows:

Group I — Incidence of hepatitis in recipients of plasma and whole blood:

| | Donor Exposure | |
|----------------------|----------------|----------------------|
| | Plasma | Whole blood |
| Recipients | 815 | 3773 |
| Expired | 284 | 2885 |
| Believed living . . | 531 | |
| Followed | 370 | 3694 |
| | | 1310 |
| | | 4 cases of hepatitis |

Group II — Incidence of hepatitis in recipients of plasma only:

| | Donor Exposure | |
|----------------------|----------------|-------------|
| | Plasma | Whole blood |
| Recipients | 292 | 3388 |
| Expired | 95 | 0 |
| Believed living . . | 197 | |
| Followed | 164 | 3290 |
| | | 0 |

No cases of hepatitis

In summary, it was pointed out that Group I recipients showed the incidence of hepatitis to be expected from their exposure to whole blood; while Group II recipients were exposed to 81 per cent of the total plasma donor population with no cases of hepatitis. In addition, plasma from the pools used in the Group I cases contracting hepatitis were given to 45 other patients, 30 of whom could be followed. None developed hepatitis. The infectivity of untreated units of plasma varies from about 7 to 22 per cent in pools from 50 or more donors.

Thus, this study, for the first time, offers statistically conclusive evidence that storage of plasma for six months or more at room temperatures has eliminated the activity of the hepatitis virus.

LOCATION OPPORTUNITIES

ASHFORK — Pop. 700 — North centrally located — Railroad center — Contact the Women's Club, Ashfork, Arizona.

BENSON — Excellent opportunity for GP — This David-Benson trade area has about 5,000 population with only one doctor available. Contact Mrs. Thomas Allen, Secretary, Benson Business Association, Benson, Arizona.

CAMP VERDE — Located in the heart of a large farming and ranching area on the Verde River. Approximately 100 miles north of Phoenix. Badly in need of a medical doctor. Contact Ivy N. Moser, R.N., Camp Verde, Arizona.

FLAGSTAFF — Pop. 17,500 — Largest city in the north central Arizona trading area. One pediatrician is needed (as there are a number of general practitioners who would gladly refer work to him). Excellent opportunity for an eye, ear, nose, and throat doctor. Contact C. Herbert Fredell, M.D., Secretary, Coconino County Medical Society.

GILA BEND — Pop. 2,500 — 80 miles west of Phoenix — Nearest town to the Painted Rock Dam Project — Good opportunity for general practitioner. Cattle, cotton and general farming. Office and equipment available. \$150 monthly

*Trans. Am. Surg. Assoc. 74:48-60 (Sept.) 1956.

income from board of supervisors. Contact Mrs. J. F. Allison, Box 485, Gila Bend, Arizona.

LAS CRUCES, N. M. — In south central part of state and not too distant from El Paso, Texas. Population is approximately 22,000; boasts state college and White Sands proving grounds. General hospital, 85 beds, fully accredited and staffed by 14 doctors. Need urologist, anesthesiologist, and obstetrician-gynecologist. For full details write: A. M. Babey, M.D., President of the Staff, 250 West Court Street, Las Cruces, N. M.

MORENCI — Mining community located near New Mexico-Arizona border — Pop. 10,000. Has vacancy at hospital for GP. Contact Carl H. Gans, M.D., Morenci Hospital, Morenci, Arizona.

PAYSON — Pop. 1,800 — Have completed and equipped a new clinic. Are badly in need of a medical doctor; closest medical facilities are 80 miles away. For further information contact Mr. Walter Surrent, President, Payson Clinic, Payson, Arizona.

TUCSON — The VA Hospital has two vacancies at the present time — one is for an internist on the medical service and the other is for either a general or thoracic surgeon on the surgical service. State license is necessary, but not necessarily an Arizona license. Contact S. Netzer, M.D., Director, Professional Service, VA Hospital, Tucson, Arizona.

YOUNGSTOWN — Pop. 130 — Located 16 miles from Phoenix, four miles from Peoria, one and a half miles from El Mirage, one mile from Surprise, each a potential field of practice. Most residents are 60 years of age or older and are in need of medical care. Office space is currently provided at no rental. A medical center is being planned. Interested doctors may contact Mr. Sid Lambert, Box 61, Marionette, Arizona.

YUMA — Pop. 15,000 — Situated in the southwest corner of the state on the Colorado River — Semi-retired medical doctor, possibly a GP, may work part time or full time. He may do his own surgical procedures or may call upon local surgeons to do surgical procedures. If he would wish, he may be director of the Yuma County Health Unit which is an administrative position. Now paying \$6,600 annually for a permanent, part time physician. However, it could be revised upward considerably if he would handle his own surgery and the health

unit. If interested, contact Mr. R. L. Odom, P. O. Box 1112, Yuma, Arizona.

For information on opportunities in the field of industrial medicine, contact:

Harold J. Mills, M.D., Phelps Dodge Hospital, Ajo, Arizona.

Carl H. Gans, M.D., Phelps Dodge Hospital, Morenci, Arizona.

Ira E. Harris, M.D., Miami-Inspiration Hospital, Miami, Arizona.

Charles B. Huestis, M.D., Box 928, Hayden, Arizona.

H. W. Finke, M.D., Magma Copper Company Hospital, Superior, Arizona.

John Edmonds, M.D., Kennicott Copper Corporation Hospital, Ray, Arizona.

LOCATION INQUIRIES RECEIVED DURING MARCH AND APRIL 1957

CYR, GERALD ARTHUR, M.D., Route 151, Greenland, N. H., GP wishes to locate in county or state governmental institution. Available now.

DUSKAS, JAMES J., M.D., 1110 Oakmont Avenue, Erie, Pa., GS, desires assistant or associate practice. Available now.

HELFMAN, RICHARD J., M.D., 48 St. Paul's Place, Brooklyn 26, N. Y., GP, 1956 graduate of Chicago Medical School. Desires general practice. Available 1959-1960.

JOSEPH, ROBERT H., M.D., 68 Kinley Drive, Las Vegas, Nev., GP, presently serving in the U. S. Air Force. Desires clinic, assistant or associate practice. Available July 1957.

LARSON, LEWIS WILLIAM, M.D., 130 South Wheeler Street, St. Paul 5, Minn., I. Desires clinic or associate practice. Available now.

LAYON, A., M.D., St. Luke's Hospital, Fargo, N. D., ObG. Completing residency in obstetrics-gynecology. Interested in clinic, assistant, or associate practice. Available July 1, 1957.

MILES, MARILYN, M.D., Kemmerer Building, Norton, Va., Pd. 1950 graduate of Albany Medical College. Available now.

NELSON, WILLIAM J., M.D., 1315 Fourth Street, Coronado, Calif., GP. 1953 graduate of University of Texas. Presently in military service. Prefers general, assistant or associate practice. Available November 1957.

ROBERTSON, LEO EUGENE, M.D., 26743 Eldridge Avenue, Oakland, Calif., GS. 1950 graduate of University of Utah College of Medicine. Presently in U. S. Navy. Prefers clinic, as-

sistant, associate or industrial practice. Available July 1, 1957.

STRICKLAND, CHARLES E., JR., M.D., 2923 Wylie Drive, Dallas 35, Tex., Path. 1951 graduate Southwestern Medical School. Currently resident physician in pathology. Available July 1, 1957.

TAVENNER, MICHAEL C., M.D., 607 Medical Arts Building, Norfolk 10, Va., Pr. Prefers clinic, assistant or associate practice. Available now.

THOMPSON, ARTHUR F., M.D., 509 West Arlight Street, Monterey Park, Calif., ObG. 1951 graduate of Stanford Medical School. Prefers small clinic, assistant or associate practice. Available January 1, 1958.

WARNER, J. ROBERT, M.D., 615 A.C. and W. Squadron APO 132, New York, N. Y., GP. 1953 graduate Georgetown University School of Medicine. Currently completing two years service in U. S. Air Force. Prefers general, associate with one or two physicians. Available September 1, 1957.

AMERICAN CANCER SOCIETY

THE AMERICAN Cancer Society announces the award of \$4,636,651 for research to 243 scientists in 108 universities and medical centers in 35 states — an all-time record for the society. The grants were made from 408 applications for a total of \$12,507,613.

This is in addition to a total of \$3,000,350 in grants to 46 research centers already awarded during the current fiscal year. In all, the society is this year devoting \$7,637,001 to cancer research.

These record-shattering awards were made possible by the success of the society's annual crusade in 1956. The 1957 campaign, well ahead of last year's, indicates that still greater funds will be made available for research during the 1958-59 fiscal year.

The 243 projects and fellowship grants were voted by the executive committee of the society's board of directors. They are the first to be approved under a new granting system in which committees of scientists and a research advisory council serve the society directly. Grants are now being made three times a year, instead of once as in the past.

"In the 44 years of its existence," Mefford R. Runyon, the society's executive vice president

said, "the society has seen four distinct psychological eras.

"The first was one of little public interest or support. Cancer was considered incurable and, in some circles, a loathsome disease. Quacks and charlatans prospered on their false 'cures,' which frequently were more painful than the disease itself. Only a few scientists were optimistic or foolhardy enough to enter this field so likely to end in frustration and defeat.

"The second stage was introduced by a series of intensive public education efforts before World War II which aroused much public and medical interest in cancer control. Hopelessness began to yield.

"We entered a third stage when the society enlisted a growing army of scientists with the promise of support so that they could undertake and continue research on cancer, using their specialized skills and employing all the wonderful new tools — the atomic tracers, electron microscopes and other devices — which a war-spawned Age of Science had recently produced. Research became the keystone of the effort to control cancer; and we began a drive to finance this understaking. We also worked with congress to induce the government to join us in the fight. These efforts were eminently successful.

"The fourth stage now is beginning. Research of the last decade has given us an enormous store of knowledge about the fundamental processes of life — life in health, and life in disease. It has provided us with leads to the chemical and physical causes of cancer and the nature of the cancer cell. We have moved from the age of scarcity in research support to one of moderate plenty. We are now organized so that our research advisory council considers our total research program and adjusts our support to meet the needs of the scientist.

"There is no way of telling how long it will take to control human cancer. We do not know yet where or when the first big break-through will take place. We do know, however, that never before have the prospects been so encouraging."

Prominent among the suspected cancer-causing agents to be studied are viruses and virus-like particles. They are being investigated both from the viewpoint of physical behavior and chemical composition, especially the proteins and nucleic acids which comprise them.

Considerable research will be undertaken into the chemistry of the cancer host. Differences in hormone and enzyme production in normal and cancerous animals and people will be sought; and the natural immune mechanisms, which permit cancer to grow in one host and destroy cancer in another, will be studied.

The grant award list covers a broad field of possible chemical and physical forms of treatment for the cancer patient. Among the agents under study are tumor-destroying viruses, hormones (including pupation hormone which transforms certain wormlike larvae into the insect stage of their development), enzymes and other proteins, nucleic acid derivatives, and a large number of synthetic chemicals.

MEDICAL SECRETARY

THE KEY to improved efficiency in a physician's office may be in the hands of his medical office personnel, a nationwide survey reveals. (Ideal Knowledges, Skills and Personal Qualities of Medical Secretaries.)

Are medical secretaries and assistants properly trained for their jobs? Does the physician-employer properly delegate duties to office personnel to make best use of individual skills and training? Are there tasks which the physician should assign to an aide in order to give him more time to see patients?

These are some of the questions which are answered in a study conducted last year to determine the ideal knowledges, skills and personal qualities of medical secretaries. Conclusions were based on mail-questionnaire information supplied by approximately 500 top-notch medical secretaries and on personal interviews with physicians and business educators. The study was conducted by Harold Mickelson, Northwest Missouri State Teachers College, in co-operation with the American Medical Association. Mickelson completed the study in connection with his work toward a doctor of education degree at Indiana University.

Mickelson analyzed those activities performed in physicians' offices, classifying them into three categories: (1) highly technical medical activities which under normal conditions only a physician can perform; (2) semitechnical medical activities which may be performed satisfactorily by medical office personnel under the supervision of the physician, and (3) business

office activities of a routine or management nature which are ideally performed by the secretary or aide.

Mickelson concludes that "physicians are not making maximum use of their extensive training when they unnecessarily perform semitechnical medical and business activities." To help physicians determine what responsibilities can be properly delegated to office personnel, Mickelson is currently preparing a system for assigning duties which will be furnished by AMA to medical societies.

A highly competent secretary, he believes, can relieve a physician of performance of all or nearly all business — office and semitechnical medical activities connected with his practice. The physician, however, still remains responsible for supervision of these activities.

Physicians interviewed agree with Mickelson. One doctor expressed the opinion that "there is almost no ceiling to the responsibility that an outstanding secretary can take over for a physician." Another said: "There is no practical way to practice medicine today without a medical secretary." The consensus was that it is penny-wise and pound-foolish to employ an incompetent aide.

Where can girls get proper medical secretarial training? What kind of schools should offer training to medical aides? Mickelson believes training should be at the post-high school level and that a four-year college degree training program is preferable to a shorter course.

According to Mickelson, only schools with strong business training and strong science departments can offer the kinds of courses and the quality of training that is desirable. His recommendations for course content include development of high-level competency in all generally accepted secretarial skills, business office activities peculiar to the medical office, and all semitechnical activities ordinarily performed by physicians' employees. Semitechnical activities are those related to the examination or treatment of patients, weighing patients, taking temperatures and blood pressures, assisting with minor office surgery or treatment procedures, giving certain types of injections, sterilizing instruments, and conducting some laboratory tests, such as urinalysis and simple blood tests.

Students also must develop certain personal qualities important to their particular job success. These personal qualities were listed by

physicians in interviews and are considered necessary in the good medical secretary or aide. They include: pleasantness, neatness, ability to get along with people, ability to use the telephone effectively, intelligence, politeness, ability to keep secrets, interest in and feeling for people, initiative, honesty, enthusiasm, interest in medical work, loyalty, co-operation, conservatism, pleasant voice, self-confidence, ability to make decisions, ability to instill confidence, willingness to continue to learn on the job, dependability, patience, aggressiveness (must not be shy), accuracy, memory, maturity, and a sense of humor.

On the basis of the survey, a number of steps which medical associations and medical secretary-assistants groups can take to help provide a greater force of better-trained aides in the future are suggested:

1. Encourage schools with the necessary personnel and facilities to offer high-quality medical secretarial training.
2. Recruit high school graduates for high-quality medical secretarial training.
3. Organize or assist in organizing refresher courses in medical office administration for the employed medical secretary and assistant.
4. Persuade individuals currently employed as medical secretaries to increase their effectiveness on their jobs through additional training in school and/or on the job.
5. Point out to physicians the importance of employing well-qualified medical secretaries and remunerating them adequately.

DOCTOR CONTRIBUTIONS TO MEDICAL SCHOOLS

THE AMERICAN Medical Education Foundation reports that physicians gave well over \$3 million to medical education in 1956.

The AMEF data gives a breakdown of physician contributions to medical education last year. For the first time, this also includes information on contributions made through alumni campaigns. The report showed:

In 1956, 84,657 doctors gave a total of \$3,320,152.14 to the country's 83 medical schools. This total included \$1,072,727 given through the AMEF by 39,892 doctors, and \$2,247,425 given directly to the medical schools by 44,765 doctors.

The AMEF's million-plus contribution is to be used at the discretion of the schools. The new

information shows that most of the contributions made through alumni campaigns are also "unmarked," that is, they may be allocated as the deans of the individual schools see fit.

BRITAIN'S HEALTH SERVICE OF NO VALUE TO EDEN

WHILE BRITAIN'S National's Health Service was in the throes of a crisis, Anthony Eden made a hurried 11,000-mile trip from New Zealand to the Lahey Clinic in Boston for emergency medical care.

Apparently the former British prime minister wanted no part of his country's medicine, which was socialized a decade ago.

It's the second time he has sought medical treatment at the Lahey Clinic. He underwent surgery there in 1953 to correct a bile duct obstruction. Mr. Eden is now suffering from a liver ailment.

Just a few weeks before his trip here, Britain's 40,000 socialized medicine doctors threatened to strike unless the government quits stalling on their demand for a 24 per cent increase in pay. The matter now rests with a royal commission which is to make a study report in October.

MEDICAL-LEGAL SYMPOSIUM

MORE THAN 1,200 doctors and lawyers attended the three regional 1957 medico-legal symposiums sponsored by the committee on medicolegal problems and the law department of the A.M.A. in Atlanta, Denver, and Philadelphia. The sessions were held on three successive Fridays and Saturdays. They were so successful that similar sessions are already being planned for 1959 in the East, Midwest, and the West.

Dr. Herman A. Heise, Milwaukee, opened each symposium with a discussion of the chemical tests now being used for intoxication. In each of the cities, his talk was followed by a mock-trial demonstration in which a "drunken driver" was convicted from evidence obtained through a breath test.

The second day's session in each city featured a panel discussion on "Trauma and Cancer," followed by a lecture on "Medical Expert Testimony," and a final question-and-answer period.

Dr. David B. Allman, A.M.A. president-elect, outlined four areas where doctor-lawyer co-

operation is needed: The briefing and use of physicians who must testify in court; enactment of a law to provide tax deferments for the self-employed to be used for retirement funds; narcotics control and care of addicts, and development of an inter-professional code of ethics for the two professions.

The two-hour mock-trial demonstration was supplemented by showing of "The Medical Witness," a motion picture produced by the William S. Merrell Company in co-operation with the A.M.A. The film points up common mistakes made in court by both doctors and lawyers.

"Purpose of these meetings," said C. Joseph Stetler, director of the A.M.A. law department, "is to insure fair settlement of cases in court which require medical testimony. Many lawyers and doctors feel that a better liaison between the two professions will cut down immeasurably the high number of medicolegal suits."

MECHANICAL QUACKERY

THIS IS a slide film with sound pointing out some of the devices that are available on the American market and a threat to health. It was prepared by the American Medical Association for viewing by professional groups and by the general public. Some of the highlights cover the Pol-izer which was advertised as a cure for diabetes and dandruff; the Spectro-Chrome, numerous radioactive cure-alls, a Depolaray which was alleged to be good for more than 100 diseases, and the Radioclast, one of the more elaborate fakes listed. This is so informative, yet non-technical, that it is suitable for medical meetings or teenagers.

MEDICAL TEACHING MOTION PICTURES

THE FOLLOWING is a new list of medical teaching motion pictures offered by the Pfizer Professional Service Department:

1. Stress and the adaptation syndrome, by Dr. Hans Selye that is in color and sound, 35 minutes in length.
2. Dynamics of the tubercle, by Drs. Robert E. Ebert and William R. Barclay; color and sound; 28 minutes in length.
3. Active management of disability in the aged, by George C. Stoney in collaboration with

Drs. Frederic D. Zeman and Leo Dobrin; black and white, 40 minutes.

4. The bronchopulmonary segments, Part I: Anatomy and broncoscopy, by Dr. Leo L. Leveridge; color and sound; 31 minutes.

5. Nephrosis in children, produced in collaboration with Dr. Robert E. Cooke; color and sound; 18 minutes.

6. The antibiotics and terramycin; color and sound; 22 minutes.

ARIZONA BLUE SHIELD

THE NINTH annual meeting of Arizona Blue Shield was held in Yuma April 10 in conjunction with the Arizona Medical Association convention.

Newly-elected officers were: Virgil Toland, M.D., Phoenix, president; Noel Smith, M.D., Phoenix, president-elect; Florence Yount, M.D., Prescott, vice president; Carl A. Holmes, M.D., Phoenix, secretary; E. N. Holgate, banker, Phoenix, treasurer. Dr. Toland succeeds G. Robert Barfoot, M.D., Phoenix, who completed his term as president, a term that saw in-office surgery, payments for the assistant surgeon and a thoroughly re-evaluated schedule of surgical allowances added to the program.

From the annual report came some illuminating and interesting facts. For example, out of an income of \$1,374,570.09, \$1,073,509.04 was used as payments to doctors for services rendered Blue Shield members. Actually out of each dollar's income for 1956, to break it down even more, nearly 85 cents went to provide for the care of members, past and future. Since the plan's inception back in 1948, cumulative payments to doctors have amounted to \$5,774,285.04; 1956 marked the first experience where payments went over the million dollar mark in one year.

The five procedures accounting for almost 50 per cent of the services were in order: Normal maternity, T & A, hysterectomy, fractures and appendectomy.

Perhaps the most dramatic fact is the growth of the plan. In 1948 there were 33,476 members. By the end of 1956 there were 139,893 members (that figure is already well over 140,000 into 1957).

Dr. David Engle, Tucson, attended the National Blue Shield Professional Committee meeting in Chicago, February 11-13. Reports indicate

t was an excellent and informative session.

EMERGENCY MEDICAL CARE CARD — Connecticut

A MEDICAL "passport" for emergency care is now available to physicians for their patients' protection in the event of an accident. According to James G. Burch, executive secretary of the Connecticut State Medical Society, preliminary tests have indicated a high degree of acceptance of the medical information card among both physicians and patients.

The card is separated into three sections — when folded, it can easily be inserted into the identification section of a wallet. One portion of the card bears a note explaining its purpose and this portion can be detached after the note is read. The other two portions are folded so that personal identity, personal description and name of family doctor appear on the outside, medical information on the inside. As the copy points out, the card provides information instantly — and notations about physical conditions often affect the manner of emergency treatment (as in allergy cases, drug sensitivities, and diabetes).

Cards have been sent, with a cover letter, to physicians in test areas throughout the state. The letter explains the card's use and offers additional quantities for distribution by doctors. In line with promotion plans, a suitcase exhibit entitled, "An Invitation to Protect Your Life" has been placed in the lobby of the Yale department of public health, school of medicine. The legend reads: "Americans go everywhere — cars, trains, ships and planes transport us day and night. This means we're often away from home. And, if an emergency should then arise, quick information might be needed for medical care. The emergency medical card has been designed to meet that need. Take the card to your next physical examination. Your doctor will be glad to help you protect your health."

(We could profitably adapt this for use in Arizona — Editor.)

POLICY GUIDES ON PUBLICITY — California and New York

EVEN WHEN representatives of medical societies, hospitals and public information media agree on methods of releasing publicity, there

is often need for a written statement of policy or procedure.

One of the most recent policy guides is a co-operative effort on the part of the San Francisco Medical Society press relations committee and the San Francisco Hospital Conference. The guide is particularly concerned with publicity emanating from hospitals on costs, operation, equipment, techniques and personnel. One portion of the guide states that such publicity is desirable "in order that the public may have the fullest possible understanding of the economics of hospital operations, the elements which enter into the rates charged for hospital care and special services, and the place of hospitals in the health care of the community."

The Medical Society of the State of New York has issued a second edition of its "A Guide for Co-operation." This policy statement is divided into three sections — one concerning the release of information by doctors, another concerning hospital publicity and the third covering the use of such information by press-radio-TV. Except for a minor change in context, a new letter of acknowledgement, and a change in format (from 5" by 7" size to that of a standard business envelope), the 12-page booklet contains about the same basic recommendations as previously.

STATE LEGAL AFFAIRS COMMITTEE DESCRIBED IN NEW BOOKLET

THE LEGAL affairs committee of the Montana Medical Association has published an outline of its aims and activities in an eight-page brochure entitled, "Liability." Among the major purposes of the committee are: To advise, on request, members of the association when they are confronted with medicolegal problems, to review medical testimony, to co-operate with the association's mediation and public relations committees regarding the rights of the public, and to co-operate with the Montana Bar Association or its component societies in medicolegal matters.

In a foreword to the pamphlet, Dr. Louis J. Regan wrote: "In the final analysis, it is the physician himself who is responsible for the continuing existence of the vicious malpractice situation. . . . prevention is the best defense against malpractice." Also printed in "Liability" are 23 commandments developed by Dr. Regan as a physician's guide to preventing professional lia-

bility claims. Copies of the booklet, "Liability," may be obtained from L. R. Hegland, Executive Secretary, Montana Medical Association, 1236 North 28th St., P. O. Box 1692, Billings, Mont.

THE CLINICAL MANAGEMENT OF VARICOSE VEINS by David Woolfolk Barrow, M.D. 169 pages. Illustrated. (1957) Hoeber-Harper, \$6.

Diagnosis, therapy, and aftercare are explicitly presented from extensive personal experience. Discussion of theoretical or controversial points is limited and emphasis is put on concise and graphic accounts of therapeutic procedures. When palliative relief is the only recourse, the author explains how to get the best possible results.

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PHOENIX, ARIZONA

Future Meetings

Rocky Mountain Cancer Conference PRELIMINARY PROGRAM

Wednesday, July 10

Morning — Lincoln Room

9:30-11:45 — Symposium on Cancer of the Stomach; Presiding, Kenneth C. Sawyer, M.D., Denver. Participants: L. Henry Garland, M.D., San Francisco; Joseph Bank, M.D., Phoenix; Alton Ochsner, M.D., New Orleans; Joseph Cunningham, M.D., Birmingham.

12 noon — Luncheon, Round Table Discussion; Presiding, Frank B. McGlone, M.D., Denver.

Afternoon — Lincoln Room — Presiding, Clinton S. Lyter, Colonel M.C., Aurora.

2-2:30 — Arthur T. Hertig, M.D., Boston; "Pathology of Ovarian Tumors."

2:30-3 — Richard H. Overholt, M.D., Boston; "Management of Benign Intra-Thoracic Lesions."

3-3:30 — Alton Ochsner, M.D., New Orleans; "Cancer of the Thyroid."

3:30-4 — Joseph Bank, M.D., Phoenix; "Diagnostic Problems of Cancer of the Pancreas."

Evening — Green Gables Country Club

6:30-7:30 — Cocktail Hour.

7:30 — Banquet; Speaker, Kenneth McFarland, Ph.D., Educational Consultant and Lecturer, General Motors Corporation; "Ropes of Gold."

10-12 — Dancing.

Thursday, July 11

Morning — Lincoln Room

9:30-11:45 — Symposium on Cancer of the Lung; Presiding, Mordant E. Peck, M.D., Denver. Participants: Richard H. Overholt, M.D., Boston; L. Henry Garland, M.D., San Francisco; Seymour Farber, M.D., San Francisco; Joseph A. Cunningham, M.D., Birmingham.

12 noon — Luncheon, Round Table Discussion; Presiding, James E. Lewis, M.D., Colo. Springs.

Afternoon — Lincoln Room — Panel on Cytology; 2-2:20 — Joseph A. Cunningham, M.D., Birmingham.

2:20-2:40 — Seymour Farber, M.D., San Francisco.

2:40-3:10 — Arthur T. Hertig, M.D., Boston; "Genesis of Cancer of the Cervix."

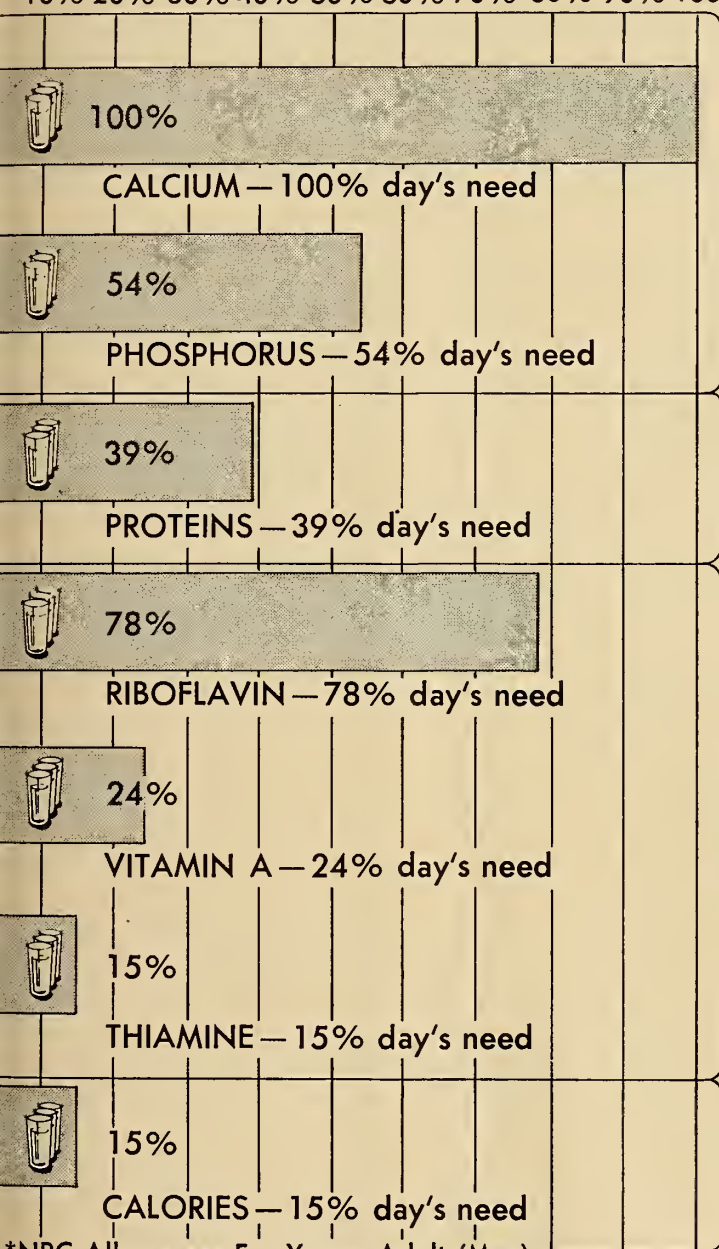
3:10-3:30 — Questions and answer period.

For additional information, contact John S. Bouslog, M.D., Chairman, Cancer Conference, 835 Republic Building, Denver 2, Colo.

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11TH GENERAL ASSEMBLY WORLD MEDICAL ASSOCIATION

THE FORTHCOMING 11th General Assembly is to be held in Istanbul, Turkey, — the world's "oldest and newest city" — you are confronted with a tempting opportunity to visit all the world famous centers of medical lore and historical interest between the Atlantic and the Bosphorus. The dates of the assembly are September 29 to October 5, 1957. The pre-registration fee of \$15 includes your attendance at the annual dinner and an excursion, on which further information will be available later.

THE AMERICAN COMMITTEE ON MATERNAL WELFARE, INC.

A COMPREHENSIVE review of complete maternity care will be presented by the American Committee on Maternal Welfare at the Seventh American Congress on Maternal Care (formerly known as the American Congress on Obstetrics and Gynecology) to be held at the Palmer House, Chicago, July 8-12, 1957.

The five-day congress — under the leadership of F. Bayard Carter, M.D., professor and head of the Department of Obstetrics and Gynecology at Duke University, Durham, N. C., and Samuel B. Kirkwood, M.D., Commissioner of Public Health for the Commonwealth of Massachusetts, and Professor of Maternal Health at Harvard Medical School — will present topics dealing with the interprofessional approach to maternal and infant care. The program committee, composed of organizational representatives from obstetrics-gynecology, general practice, pediatrics, anesthesiology, nurse anesthesia, nursing, nutrition, public health, hospital administration, mental hygiene, and social service, has developed a program to afford maximum opportunity for audience participation.

Speakers and registrants at the panel discussions, luncheons, round tables, breakfast conferences and laymen's forum will examine and pursue the questions: "What is complete maternity care?" "Who provides it?" "How is complete maternity care provided?"

Many of the 4,000 expected to attend are planning to combine valuable educational experience with a vacation.

Further information can be attained by writing: The American Committee on Maternal Welfare, 116 South Michigan Avenue, Chicago 3, Ill.

ANNUAL OTOLARYNGOLOGIC ASSEMBLY

THE DEPARTMENT of Otolaryngology, University of Illinois College of Medicine, announces its annual assembly in otolaryngology from September 30 through October 6, 1957. The assembly will consist of an intensive series of lectures and panels concerning advancements in otolaryngology, and evening sessions devoted to surgical anatomy of the head and neck, and histopathology of the ear, nose and throat.

Interested physicians should write direct to the Department of Otolaryngology, 1853 West Polk Street, Chicago 12, Ill.

CONGRESS OF LEGAL MEDICINE

THE FIRST American congress of legal medicine and law-science problems to be conducted by the Law-Science Institute at the Hotel Morrison, Chicago, Monday, July 8 — Saturday, July 13, 1957 inclusive and Monday, July 15 — Saturday, July 20, 1957 inclusive, with aid and cooperation from the Law-Science Academy of America and the Law-Science Foundation of America.

ARIZONA CANCER SEMINAR, JANUARY 1958

THE 1958 meeting of the Arizona Cancer Seminar will be held at the Tucson Inn, Tucson, Arizona, January 23, 24 and 25, 1958. The faculty consists of the following members:

Dr. A. N. Arneson, gynecologist, St. Louis.

Dr. James Barrett Brown, plastic surgeon, St. Louis.

Dr. Ross Golden, radiologist, Los Angeles.

Dr. C. F. Lehman, dermatologist, San Antonio.

Dr. Ian McDonald, surgeon, Los Angeles.

Dr. Arthur Purdy Stout, pathologist, New York.

Mr. E. Dale Trout, physicist, General Electric Corporation.

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PHOENIX *Clinical* CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL PRESENTATION OF CASE NO. 21

History: The patient, a 28-year-old white man, was admitted to Birmingham Veterans Administration Hospital on March 23, 1950. He had been in good health until February 1, 1950, when he developed a severe chest cold with cough and pain in the chest lasting several days. The pain then settled in the abdomen, lumbar area, in the neck and the back of the head. On March 1, 1950, he was admitted to a Pomona hospital for two days where a blood Wassermann test was reported negative, but the spinal Wasserman was reported positive. As a result, he was treated with 5 million units of penicillin. There had been no previous history of a penile lesion or of positive blood test for syphilis. During treatment, the patient developed weakness of the legs and had difficulty walking. He also experienced counter-clockwise vertigo. On March 7, 1950, he was admitted to the Los Angeles County General Hospital because of inability to swallow. The mouth was pulled to the right, the left eyelid would not stay open, and vision in the left eye had failed rapidly. A spinal tap was negative for syphilis and acute poliomyelitis. During 16 days at the county hospital his condition became progressively worse, and four days before transfer to Birmingham VA Hospital the patient's left testicle became tender and swollen. At the same time he developed numbness of the fingers and toes.

Past history: The patient had mumps bilaterally at the age of 10. Since the age of 15, he had noted several soft lumps under the skin of the arms and legs. Several of these, diagnosed as "fatty tumors," were removed while he was in the navy.

Physical examination: On admission to Birmingham VA Hospital, the patient was acutely ill with a temperature of 99° F. He showed evidence of marked weight loss, dysarthria, and lethargy, but he was mentally oriented and cooperative. The pharynx was slightly red. The lungs were clear to percussion and auscultation; no rales were heard. The breath sounds were normal. The heart was of normal size; the rate was 120 and regular. Examination of the abdomen revealed no tenderness or abnormal masses, and the liver and spleen were not palpable. The left testicle and epididymis was extremely tender and swollen. There was mild tenderness over the seventh thoracic spinous process and in the iliosacral regions bilaterally. All extremities were markedly emaciated, particularly the legs. There was pes cavus of the right foot. There was a diffuse, macular, erythematous rash about the neck and chest. There was mild enlargement and tenderness of the inguinal lymph nodes bilaterally.

Neurologic examination (cranial nerves): The sense of smell was normal. The visual fields were full to gross testing. Vision was grossly normal. The fundi showed blurring of the disks bilaterally without measurable elevation. The retina veins were full. Bilateral droop of the lids was a result of paresis of the levator palpebrae muscles. There was a paralysis of lateral gaze with the right eye and paresis of lateral gaze in the left eye. Weakness and subjective double vision were noted on looking down and center with both eyes. The corneal reflexes were absent bilaterally. Hypesthesia was found in the second and third divisions of the trigeminal nerve with paresis of the muscles of mastication bilaterally. A complete bilateral peripheral facial paralysis was present. The hearing was normal bilaterally. The palate was weak on elevation. The patient had dysphagia and dysphonia. The tongue could not be protruded normally. *Sensory examination:* Bilateral hypalgesia without hypesthesia was present from C-2 through C-7. Pain, touch, vibration, and position senses were normal in the lower extremities. *Reflexes:* The biceps and triceps reflexes were hypoactive and equal. The superficial abdominal reflexes were present. The knee and ankle jerks were 1 plus.

There were no pathologic toe or finger signs. The Kernig and Brudzinski signs were positive. *Cerebellar tests:* Bilateral ataxia and dysmetria in finger to nose tests were demonstrated.

Laboratory studies: The red blood count on admission was 4,250,000, hemoglobin 11.8 gm., and the white blood count 8,700, with polymorphonuclear leukocytes 61 per cent, lymphocytes 36 per cent, monocytes 3 per cent, eosinophils 0, basophils 0, and blast forms 0. Spinal fluid examination showed 182 lymphocytes with 116 mg. of protein. The fluid was clear, the pressure and dynamics normal. A portable chest x-ray at 60 inches distance showed no abnormalities.

Course in hospital: Twenty-four hours after admission, the patient began to run a fever which lasted 72 hours with the temperature up to 104° F., on two occasions. He was placed on Aureomycin, Chloromycetin, and Crystacillin and there was a drop in temperature. The patient was seen on March 25, 1950, by Dr. J. M. Nielsen, senior consultant in neurology, who made a diagnosis of meningoencephalomyelitis of viral origin. The patient continued to improve slowly but began to have periods of disorientation and confusion. His appetite remained poor and his strength very weak. On April 1, the only cranial nerve involvement noted was residual weakness of the third and seventh cranial nerves bilaterally. At this time the patient developed an epididymitis which apparently responded to medication, but the swelling in the epididymis and testicle never disappeared. All antibiotics were stopped at this time. The patient required more or less continuous sedation because of severe low back pain. The daily fluid intake was around 6,000 cc. and the output 5,000 cc. This was explained by presumed involvement of the hypothalamus. On April 14 the patient's hemoglobin dropped to 9 gm. and the persistent anemia became more severe. The patient received 1,000 cc. of whole blood. He remained confused although he was able to be in a wheelchair for part of the day. The patient developed exposure keratitis from incomplete lid closure due to his bilateral seventh nerve weakness.

On April 12 the blood count showed 3,250,000 red blood cells, hemoglobin 10.2 gm. and 7,900 white blood cells. At this time he had an abnormal differential showing 46 per cent polymorphonuclear leukocytes, 30 per cent lympho-

cytes, and 22 per cent monocytes, 2 basophils.

On April 17, 1950 temperature was 98° F., pulse 88, respirations 20. The patient was able to swallow better and was placed on a soft diet. On April 25 he was again seen by Dr. Nielsen, who found marked weakness with generalized muscular atrophy including the face. The sense of smell and visual fields were normal. Papilledema was present and there was a bilateral sixth nerve weakness. The left pupil was dilated and reacted sluggishly to light. There was recovery of sensation in the face, but the patient had trouble hearing with the left ear. The face was completely paralyzed bilaterally with a Bell's phenomenon. All deep reflexes were absent and a Babinski sign was found on the left. The superficial abdominal reflexes were present.

On May 6, temperature was 103° F., pulse 120, respirations 14. At this time disassociated movements of the eyes developed and the patient was placed in an oxygen tent. A Levine tube was introduced into the stomach because of abdominal distention. On the same evening the temperature was 103° F., pulse 140 and respirations 15. Blood pressure was 120/80. Papilledema was present with retinal hemorrhages. For the first time the spleen was palpable at the left costal margin, and the liver two fingerbreadths below the right costal margin. Large inguinal lymph nodes were present bilaterally. Because of the lack of improvement, a blood count was ordered which disclosed the unexpected following findings: the total white count was 240,000, and a smear disclosed numerous young cells, probably immature myelocytes. The fluid aspirated from the Levine tube showed evidence of recent bleeding. The stool showed the presence of occult blood. The patient began to bleed rapidly following attempted venepunctures, and large areas of ecchymosis developed. The red blood count was 3.7 million and the hemoglobin 10 gm. Hematocrit study showed one-fifth of the cells to be white blood cells. At this time a diagnosis of myelogenous leukemia was made and the patient was given blood transfusions.

On May 6, the total white count was 278,000. The patient was markedly weak, perspiring profusely, and the platelet count was 20,000. A course of aminopterin and toluidine blue was given. Within 24 hours the patient developed visual hallucinations and became terminal, dying that evening. (The laboratory data obtained dur-

following table.)

| Date | RBC | Hgb. | WBC | PMN | Lymphs | Mon. | Eos. | Baso. | Blasts. |
|---------|--|-----------------|---------------------------|-----|--------|------|------|------------------|---------|
| 3/24/50 | 4.25 | 11.8 | 8,700 | 63 | 35 | 3 | 0 | 0 | 0 |
| 3/24/50 | Spinal fluid - 182 lymphocytes, 116 mg. protein, clear fluid, normal pressure. | | | | | | | | |
| 3/27/50 | 4.92 | 14.5 | 8,750 | 64 | 35 | 4 | 5 | 1 | 0 |
| 3/28/50 | Spinal fluid - 28 lymphocytes, 130 mg. protein, clear fluid, normal dynamics. | | | | | | | | |
| 4/4/50 | 4.08 | 12.1 | 9,050 | 52 | 39 | 7 | 1 | 1 | 0 |
| 4/12/50 | 3.25 | 10.0 | 7,900 | 46 | 30 | 22 | 0 | 2 | 0 |
| 4/18/50 | 4.19 | 13.2 | - | - | - | - | - | - | - |
| 4/26/50 | 3.82 | 12.1 | - | - | - | - | - | - | - |
| 5/5/50 | 3.70 | 10.2 | 278,400 | 15 | 64 | 11 | 10 | - | 8 |
| | 5 stabs, 1 juv., 1 promyelocyte, many unclassified basket cells. | | | | | | | | |
| 5/5/50 | NP41 | 41 mg. per cent | CO ₂ 50 vol. % | 14 | 78 | 8 | 1 | 22,000 platelets | - |
| 5/6/50 | 3.35 | 10.5 | 210,000 | 14 | 78 | 8 | 1 | 22,000 platelets | - |
| 5/7/50 | 3.59 | 10 | 142,000 | 10 | 67 | 0 | 1 | 2 | - |
| | 3 promyelocytes, 1 blast. | | | | | | | | |

Case History for Discussion

CLINICAL CLUB

February 27, 1956

Leslie R. Kober, M.D.

This is a rather involved three-page clinical case which starts out as a severe chest cold in a 28-year-old white man, in which we are given three diagnoses in the course of the protocol. First, because of a positive spinal fluid Wassermann, he was treated for syphilis with 5 million units of penicillin, although no other confirmative evidence seems to be found. Then, as he continues to develop neuromuscular indications of progressive disease, we are given the diagnosis of meningoencephalomyelitis of viral origin by a consulting neurologist. Finally, when an unexpected leucocytosis of 240,000 with numerous immature myelocytes was found, we are given a diagnosis of myelogenous leukemia. From this time on the course was rapidly terminated as one would expect with an acute thrombocytopenia and leukemia in spite of treatment with aminopterin and toluidine blue.

Our problem then would seem to be to try to tie all these diagnoses together and come up with a simple explanation. I think we can quickly dispose of the syphilitic diagnosis by saying that there was no supportive evidence. Although syphilis can mimic almost any kind of disease and might be considered to explain this whole picture had there been other evidence. We frequently get a false positive in virus infections, and the statement from the Los Angeles County General Hospital that the spinal tap was negative for syphilis and acute poliomyelitis, I will assume to be correct.

We are then left with an attempt to explain a case of viral meningoencephalomyelitis which terminated in acute leukemia. In reading and re-reading this case numerous times it has seemed to me pretty much a waste of time to try carefully to locate anatomically each of the

neurological findings, and here again I will accept the diagnosis of a generalized viral infection which involves the spinal cord, meninges, and the brain tissue itself. Also, it seems rather hopeless without bone marrow studies for me to come up with anything more definite in the way of a definite type of leukemia. We must first however mention the many possibilities which should be considered and then, by various processes of mental telepathy or logic, to try to come up with some sort of an answer. This involves two or three processes. First, one must think of various pathological conditions such as syphilis, TB, lymphoma of the Hodgkin's type, myeloid metaplasia, lymphosarcoma, reticulum-cell sarcoma, sarcoidosis, carcinoma; collagen diseases, especially lupus, and various mycotic diseases including actinomycosis, histoplasmosis, moniliasis, blastomycosis, coccidioidomycosis, torulosis, aspergilosis, and streptothricosis; and for good measure one might throw in such conditions as teratoma (because of the genital involvement) and infectious mononucleosis (because of the 22 per cent monocytes on one of the blood counts).

The other phase of determining a Clinical Club case based on logic rather than scientific fact is always the problem of "why was this case picked?" Secondly, did the man who picked the case have some special hobby that he would like to point up? This type of logic would leave Dr. Warrenburg completely out of the picture because he has no interest, as far as I can determine, in this type of case. While Dr. Eisenbeiss, although more definitely interested in surgical lesions in the brain, might occasionally pick such a case. Dr. White has a definite interest in leukemia, poliomyelitis, viral infections, and I might add, infectious mononucleosis. I cannot rely too much upon this type of logic for a final diagnosis, although I am in favor of Dr. White having picked this case.

It seems to me that some generalized process such as Hodgkin's or lymphosarcoma in a young man of 28 would be much more likely than carcinoma or any other of the malignant type of lesions; and it seems possible that metastasis involving the bone marrow, brain, spine, etc., might eventually end up in an acute leukemic condition. However, I do not see how it is possible to make such a diagnosis without a microscopic examination of some of the tissue. ing the patient's illness are summarized in the

With an initially normal blood count and differential, one might have to consider aleukemic leukemia with early infiltration into the spine and central nervous system, or some such rare condition as an agnogenic myeloid metaplasia which later became acute and developed findings of an acute leukemia.

Isaacs (Oxford Medicine) states, "The cause of leukemia in man is not known." He goes on to say that "Among the theories of the etiology are (a) neoplastic theory, a type of cancer, (b) a response to infection, (c) a deficiency disease, loss of control of hematopoietic function."

He also states, "Syphilis is not a cause of leukemia, although a few cases of syphilis have been reported with a leukemoid blood picture."

Kaplan (Cancer Res., Sept. 1954) believes that "to account for the bulk of human leukemias, it would be necessary to widen our horizons beyond such agents as radiation and benzol and to look with suspicion on any chemical, drug, or body reaction, such as hypersensitivity, which is capable of causing severe injury to hematopoietic tissues." He further states that "the leukemias do not spring abruptly from previously normal tissues, but burst into flame, as it were, from a smoldering, pre-existent hematopoietic disorder of varying origin and morphology."

This might explain our case. Assuming we had a beginning virus pneumonitis which, with the aid of intensive penicillin therapy, spread to the central nervous system and although the meningoencephalomyelitis symptoms subsided with some residual damage, a latent leukemic process was stimulated suddenly to burst into flame.

In looking through a few volumes of *Index Medicus*, I found a few interesting titles:

"Etiopathogenesis of leukemia; virus factor."

"Relation between reticulosarcoma and leukemia."

"Relationship of polycythemia vera to leukemia."

"Lymphosarcoma ending in leukemia."

"Primary neoplasm of the spleen with leukemia reaction."

"Experimental meningoencephalitis of rabbit after injection of post-filtration leukemic products; presence of intracellular bodies in brain."

"Infectious origin of leukemia."

"Landry syndrome associated with leukemia."

"Report of a case of subacute granulocytic

leukemia following infectious mononucleosis."

If I had had time to read all these and digest them, I still might never have come up with the correct answer, but at least they stimulated some thought on my part. The ordinary textbook on medicine begins its definition of acute leukemia by saying "This is a rapidly fatal disease of unknown etiology —."

In view of the few titles which I have just mentioned, it seems unwise however not to give some consideration to lymphosarcoma, or Hodgkin's disease with a terminal leukemia, and also to consider leukemic infiltration prior to the blood picture. Even though I know Dr. White is interested in infectious mononucleosis and that the monocytes were high on several blood counts, I cannot force myself to accept this diagnosis unless we consider it as part of a vital infection.

My preference for diagnoses:

- (1) Viral pneumonitis, with meningoencephalomyelitis terminating in leukemia.
- (2) Malignant lymphoma or lympho-sarcoma with terminal leukemia.
- (3) Syphilis.

DISCUSSION

O. O. Williams, M.D.

Since I am having someone do my work for me in this discussion, I'll make it brief. Even with a long review and evaluation, my answer would probably be wrong. However, only five years separate me from the correct diagnosis. In 1945, I was stationed at Birmingham General Hospital, later Birmingham Veterans Hospital. Had this patient been five years earlier in developing his disease, or I five years later in leaving the hospital, we would have met under unfortunate circumstances and I might have known the correct diagnosis.

All symptoms, signs, and laboratory data point to a malignant lymphoma of some type. For the pathologist, the grouping of all the neoplasms of the reticulo-endothelial system under the general heading of malignant lymphoma is very convenient. In most instances, the histological pattern may determine the type, but frequently even with this available, one has great difficulty in differentiating one from any of the others.

The general term, malignant lymphoma, includes all leukemias, mycosis fungoides, lymphosarcoma, leucosarcoma, Hodgkin's disease, reti-

culum cell sarcoma, chloroma, giant follicle lymphoma, and plasma cell myeloma and leukemia. The multiplicity of clinical manifestations in this case indicate a generalized disease such as leukemia rather than more local involvement as is found in Hodgkin's disease, follicular lymphoblastoma, or lymphosarcoma. Many of the symptoms may have resulted from thrombosis or hemorrhage as well as actual neoplastic invasion. I vaguely remember a somewhat similar case in which a diagnosis of myeloma was correctly made. This case also reminds me of a patient, I believe of Les Smith, who was treated for an intractable cold and virus pneumonia in Alaska but in a few weeks was found to have plasma cell myeloma.

However, a few other conditions have to be considered. There is a possibility of a leukemoid reaction. This occurs in many diseases such as overwhelming infections, metastatic neoplasms, particularly lung and liver cancer, and even without a known etiological factor. With the exception of whooping cough, the granulocytic series of white cells are generally involved. The total count rarely reaches 200,000 per cumm. There is also a possibility of myeloid metaplasia. This also involves the granulocytic cells and is usually the result of the replacement of bone marrow by fibrosis (myelofibrosis, bone (marble bone) or neoplasm. Although young forms are present, the total count usually does not rise above 50,000 per cumm. I cannot see either of these processes in this case.

I cannot understand why this case was diagnosed myelogenous leukemia, since the increase in white cells was lymphocytic in type. Also basket cells, usually degenerate lymphoblasts, were present. This indicates a lymphocytic lymphoma. It is true that micro-myeloblasts, as is found in some acute or subacute leukemias, resemble lymphocytes but are myeloblasts. However, these cells contain "Auer" bodies, and no mention is made of such finding.

We might consider other cancer cells which might be mistaken for lymphocytes. The neuroblastoma cell of neuroblastoma of the adrenal gland, retinoblastoma and neuroblastoma of the cerebellum resemble lymphocytes both in smears and in sections. These tumors usually occur in a younger age group. Also undifferentiated cells of tumors of the respiratory tract such as lymphoepithelioma may resemble lymphocytes. I

do not believe it is either of these conditions.

One also has to consider fungi which might resemble lymphocytes. Yeast (*Monilia*) and torula could be mistaken for lymphocytes. However, this case does not resemble an infection as such. Also, in these cases, while the spinal fluid might show an increase in cells, the peripheral blood cells should not necessarily be increased. Blastomycosis also could be considered, to be discarded because of the more chronic course in this disease and the marked increase of leukocytes.

Having decided on malignant lymphoma as the most likely diagnosis, the problem seems to be one of identification of the type. A skin biopsy, bone marrow studies, biopsy of a lymph node and x-ray of flat bones are indicated. With the aid of one or all of these. I am sure a reasonably correct diagnosis could be made. Protein studies with A/G ratio might help to rule in or out plasma cell myeloma. In this disease, especially the rapidly progressive leukemic type, anemia would be more marked and rapidly progressive. Hodgkin's disease, excepting Hodgkin's sarcoma, would appear locally first and not show an increased white blood count. Hodgkin's sarcoma and reticulum cell sarcoma would be an acute but not likely cause of an increase in cells. Monocytic leukemia of an acute type might cause all the symptoms and signs of this patient, but the white count usually does not go beyond 40,000 to 50,000. Follicular lymphoma is more chronic in character, usually lasting for years. Likewise, mycosis fungoides is slowly progressive with skin lesions predating the leukemic blood picture. Lymphosarcoma, called leucosarcoma when associated with increased white blood cells in the peripheral blood, is somewhat more chronic in character than present in this case.

The differentiation would seem to be between myelogenous and lymphatic leukemia. While I have discussed this case in a general way with little reference to specific symptoms, however, the clinical course is one of an acute or at least subacute disseminated process in spite of a smear showing in general mature cells. The testicular tenderness and swelling is not too uncommon in leukemia, but I believe is found more commonly in lymphatic leukemia. The appearance of lymph nodes would likewise suggest lymphatic leukemia as they would occur

late if at all in acute myelogenous leukemia. The cytological studies, if accurate, show a fairly rapid increase in the lymphocytic series of cells. The immature granulocytes may be the result of bone marrow replacement by lymphoma cells. All the neurological signs as well as spinal fluid findings indicate a diffuse lymphoma. The liver and splenic enlargement could be present in any of the lymphomas or, if this is a case of myeloma, could be due to amyloid.

However much I would like to call this plasma cell leukemia, all the data, clinical and laboratory point to a lymphatic leukemia, acute in type with some unusual clinical findings.

Therefore, my diagnosis is malignant lymphoma (an all-inclusive term), probably acute lymphatic leukemia.

DISCUSSION

DR. C. W. OLSEN (senior consultant in neurology): The history on admissions was that of the invasive stage of an infectious illness, followed by polyneuritis, meningitis, and encephalomyelitis. The possibility of syphilis was fairly well excluded. A history of mumps at age 10 made epidemic parotitis unlikely, in spite of epididymo-orchitis. However, the testicular infection might well be due to retention of urine.

The blood count on March 8 showed stimulation of leukocytic elements, with a fairly even distribution except for some relative increase in monocytes. The spinal fluid on that date showed evidence of meningeal irritation and increased intracranial pressure. The finding of subcutaneous nodules brought in a suspicion of neurofibromatosis.

Enlargement of inguinal lymph nodes in the absence of tributary infection should arouse suspicion of general lymphoid stimulation. (The lymphatic drainage of the testes is toward pelvic rather than inguinal nodes.)

The neurologic findings are more suggestive of a diffuse or disseminated reaction rather than any single focus of disease. Recheck of the spinal fluid on March 24 and 28 showed an increase in the cell count with persistence of increased protein. A remarkable change in the leukocyte count is suggested by comparison of the March reports with those in May, and the predominant increase in lymphocytes is consistent with lymphoid leukemia, especially considering the splenomegaly and increasing lymphadenopathy.

Meanwhile the evidences of involvement of the central nervous system altered a little and hallucinations were reported. Several agglutinations for specific viruses were negative. Antibiotics were administered, but without evident benefit.

In retrospect, this case is one of lymphoid leukemia with early neurologic symptoms. Infectious mononucleosis must be considered in differential diagnosis.

In neurologic practice, as contrasted with general practice, leukemia commonly has neurologic complications. The interesting thing in this case is that the nervous symptoms cannot be fully explained by such characteristic lesions of leukemia as leukocytosis, cellular infiltration, thrombosis, and hemorrhage. This raises the question of the presence of a neurotoxin or neurotropic virus associated with some leukemias, that is, an agent noxious to the nervous system as well as to the hemopoietic system. The neurologic complications of infectious mononucleosis represent such a relationship.

NECROPSY REPORT

DR. B. E. KONWALER: The body was that of a somewhat cachetic but otherwise normally developed white male who appeared to be about 30 years of age. The important findings on external examination were; first, the presence of a few cervical lymph nodes which were palpable externally; second, the presence of a number of petechiae, especially over the extremities and over the anterior chest; and third, the definitely enlarged liver and spleen which were readily palpable below the costal margins. On opening the thorax, a large greyish-white, firm mass was seen in the anterior mediastinum. The mass measured approximately 7 x 5 x 4 cm. and partially encircled the trachea, but did not significantly narrow the lumen of the trachea. The mass extended superiorly to surround some of the major vessels at the base of the neck, but here again the lumens of vessels were not significantly narrowed. The parietal pleura in both pleural spaces contained a few nodules, greyish-white to light pink in appearance and of rather firm consistency. On cut sections, these nodules had approximately the same color as the mass just described in the mediastinum.

The heart was not enlarged, weighing only 250 gm. In the midportion of the interventricular septum, mainly in the anterior half, there was seen a 1 cm. greyish-white nodule. This nodule

was quite firm and again had the appearance of the tumor nodules described previously. The endocardium had a smooth, glistening, white appearance. The valve measurements were all within normal limits and there was no significant atherosclerosis of the coronary vessels.

Both lungs were somewhat wet and boggy, the right weighing 700 gm. and the left 750 gm. On pressure of the lungs, fluid exuded readily from the cut surfaces. The liver was considerably enlarged, weighing 2,700 gm. The cut surface had a deep brown color and scattered throughout were a number of small, greyish, white nodules. The bile ducts including the hepatic and common bile ducts were markedly dilated and filled with thin, green bile. Tumor tissue extended into and surrounded the common bile duct narrowing the duct and in one area apparently completely obstructed the lumen. The gallbladder wall was similarly involved, and several large plaques of greyish-white tumor tissue were seen in the thickened wall. The lumen of the gallbladder was filled with thin, green bile.

The pancreas was surrounded by a mass of lymph nodes which was fairly attached to it; it was not possible to differentiate pancreatic tissue from lymphoid tissue readily on gross examination. The entire pancreas appeared to be replaced by greyish-white tumor tissue. Very little normal coloring or pattern to suggest pancreatic tissue was seen.

The spleen weighed 1,500 gm. Here again, the cut surface did not resemble spleen at all but had a homogenous paste-like appearance with numerous areas of softening.

The gastrointestinal tract showed grossly no definite plaques of tumor tissue within the wall, although the wall was somewhat firmer than usual.

The kidneys together weighed 350 gm. and the cut surfaces showed numerous nodules of greyish-white tumor tissue in the cortex and some in the medulla. The nodules varied in size from 1 to 2 cm. The left ureter was surrounded and partially compressed by nodules of tumor tissue, but there was no apparent interference with urinary flow in this ureter since the ureter was not dilated above the site of compression.

The lymph nodes over the entire body were

markedly enlarged. Large masses of lymph nodes were found in the mesentery and retroperitoneal areas. On cut section the lymph nodes all showed a greyish-white appearance resembling the tumor tissue described elsewhere.

Bone marrow samples removed from the sternum, the vertebra, and from the upper portion of the right femur all showed apparent cellular infiltrations and had a greyish-red appearance.

Microscopically, all of the tumor tissue showed a very similar cellular pattern. Neoplastic cells consisted of undifferentiated leukemic cells measuring from 15 to 20 micra in diameter and having a very scant rim of cytoplasm, or in some cells no cytoplasm at all. The nuclei had definite nuclear membranes and the nuclear chromatin tended to form small knots. Most of the nuclei were fairly round in shape, although occasionally a lobulated nucleus was seen. The infiltrates in the kidney, pancreas, spleen, liver, heart, and bone marrow were very extensive. In the kidney most of the cortex was replaced by leukemic infiltrate and the glomeruli and tubules were, for the most part, destroyed. Similarly, in the pancreas most of the pancreatic tissue was destroyed by the extensive leukemic infiltration. The same was true for most of the other organs. Although grossly no definite infiltrates had been noted in the gastrointestinal tract, on microscopic section every section studied showed infiltration by leukemia cells. Similarly, the genitourinary system showed leukemic infiltrates in all sections studied, including testicles and prostate. Sections of the bone marrow from the sternum, spine, and femur all showed replacement of the normal bone marrow by solid sheets of leukemic cells. It was felt that this should be classified as a stem-cell leukemia with very extensive visceral infiltration.

DR. J. S. BERRYMAN: Examination of the brain after fixation in formalin showed generalized congestion of all superficial vessels, with a small angiomatous malformation in the left cerebellopontine angle. There was moderate opticochiasmatic arachnoiditis. There were no gross areas of softening. The cranial nerves at the base of the brain were present and intact. The blood vessels at the base of the brain were normal. Sections through the brain showed generalized cerebral edema, with narrowing of the sulci and broadening of the gyri. There was

evidence of congestion throughout the white and grey matter. Congestion was also noted in the basal ganglia and thalamus. The third ventricle was slightly dilated. The substantia nigra and red nucleus could be identified grossly, and the only lesion noted was congestion. Sections through the level of the third nerve nucleus showed no gross lesions. The brain stem was rather soft due to poor fixation. There was a definite tonsillar herniation bilaterally but no evidence of pressure exerted on the medulla. Serial sections from the brain stem down to the spinal cord disclosed only intense congestion in the grey matter and to a lesser degree of the white matter. No gross areas of softening could be identified.

Microscopic: Hematoxylin and eosin stained sections of the occipital and frontal cortex disclosed round cell tumor infiltration in the leptomeninges and in the perivascular spaces of the cortex and white matter. There were up to five layers of cells surrounding some of these vessels, particularly in the white matter. The vertebral artery showed heavy infiltration of the adventitia. There was no direct invasion of the cortex or white matter. These cells making up the exudate in the perivascular spaces were round, small, dark-stained cells consisting almost entirely of nucleus with little or no cytoplasm. They appeared to be immature white blood cells. There was some early organization by fibroblasts. Mitotic figures were evident. The architecture of the cortex and individual neurons was normal.

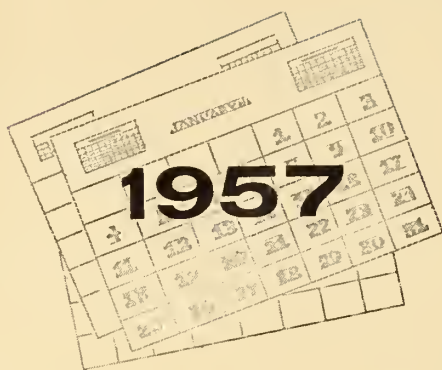
A section through the midbrain at the level of the red nucleus and substantia nigra showed the lining of the aqueduct to be normal. There was marked thickening of the leptomeninges in the interpeduncular fossa with extensive infiltration of the third nerve fibers by tumor cells. This infiltrate continued into the substance of the brain stem on the medial aspect of the cerebral peduncles in the form of a perivascular extension. The neurons of the substantia nigra, red nucleus, and reticular formation of the brain stem were normal. The mesencephalic tegmental nuclei showed some decrease in the number of neurons and evidence of atrophy with shrinkage. A section through the mid-pons showed very little infiltration of the leptomeninges. All perivascular spaces in the basilar and tegmental portion of the pons showed

collections of tumor cells. The pontine tegmental nuclei appeared normal. The neurons of the sixth cranial nerve nucleus showed altered staining reactions with pyknotic nucleoli and edema of the neurons. There were occasional nerve cells showing sclerosis. Tigrolysis was evident. Sections through the fifth cranial nerve nuclei showed poor staining of the neurons and tigrolysis. Many of the large neurons of the reticular formation showed poor staining with dissolution of their nuclei. Sections through the middle of the medulla at the level of the inferior olivary nucleus showed the previously mentioned extension into the leptomeninges, and infiltration of the eighth and ninth cranial nerves. There were numerous perivascular hemorrhages in the medullary tegmentum. The tegmental nuclei were well preserved except for altered staining reactions. All blood vessels were congested. The seventh nerve nucleus was identified, and the neurons showed nothing more than central chromatolysis. Sections through the lower medulla including the 12th nerve nucleus showed evidence of central tigrolysis of the neurons. Sections through the upper cervical spinal cord showed normal anterior horn cells, and collections of tumor cells in the leptomeninges.

Neuropathologic diagnosis: Leukemic infiltration of the perivascular spaces and cranial nerves of the brain, with secondary central chromatolysis of the corresponding neurons.

SUMMARY AND CLINICAL DISCUSSION

This is a case of a 28-year-old white man who presented himself with symptoms chiefly indicative of involvement of the nervous system. On March 14, 1950, a blood count had revealed 20,000 white blood cells with a differential in which 13 monocytes and 34 lymphocytes were seen in 100 counted cells. At that time the patient also had a hemoglobin of 12.5 gm. In view of this rather indefinite blood picture, the possibility of a blood dyscrasia was not considered. Terminally, however, the patient definitely developed a leukemic blood picture with white counts running as high as 240,000 and classical sternal marrow studies indicative of an acute leukemia, undifferentiated, and of a stem-cell type. At necropsy the patient showed very extensive visceral involvement of every organ in the body with the exception of the thyroid and adrenal glands.



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Woman's AUXILIARY

Report of the President of the Woman's Auxiliary to the Arizona Medical Association 1956-1957

AS PRESIDENT of the Woman's Auxiliary to the Arizona Medical Association, I am pleased to report the following work done by the auxiliary members of this state since the last state convention.

Four of our six organized counties, by means of door prizes at each meeting, memorial cards, and a white elephant sale, have raised funds for the American Medical Education Fund amounting to \$532.

Today's Health magazine has again been a shining light in our accomplishments with every county as well as members-at-large participating. We sold 433 subscriptions plus an allowance for free 8-month subscriptions which the editors are giving doctors in Arizona who do not now subscribe, in deference to our high record in the past. Later we are to follow up on these subscriptions. Yavapai County Auxiliary had voted six gift subscriptions for new babies born during the holidays; when not enough were born, they sent the subscriptions to inform their state legislators on medical topics.

The Bulletin chairman reports 50 subscriptions sold in the state.

Programs have been informative and varied, covering such subjects as mental health, civil defense, legislation and health education, using movies, recordings and pamphlets from the American Medical Association. Our national theme — Health is our greatest heritage — has been carried out. The co-operation between legislative committees of the auxiliary and the Arizona Medical Association, meeting together, has been excellent.

Visits to all organized counties, including our newest, Coconino County Auxiliary, have been made by the president-elect and myself to bring to them the message and enthusiasm imparted at the fall conference of state presidents and presidents-elect in Chicago. A school of instruction was given at state convention time to the incoming officers and chairmen.

We assisted in publicizing the availability of the Salk vaccine when unused supplies were being sent back last summer, as requested by the polio organization in Arizona, upon conference with Dr. S. R. Caniglia.

The series of health recordings for radio from the American Medical Association have been used by three county auxiliaries to good advantage. Audiometer tests in schools are given by one auxiliary as a public service.

Each county has participated in the various health drives — cancer, cerebral palsy, heart, polio, and TV. Red Cross, United Fund and Community Council also have been given leadership and funds. Prescott Community Hospital is \$5,842.84 richer due to the efforts of the 25 members of the Yavapai County Auxiliary in sponsoring a charity ball. Hospital aids, starting a new hospital auxiliary, and hospital fund drives are other types of co-operation shown. Exact amounts are not available because convention is almost a month earlier this year and drives are still in progress. Children's Colony, Child Guidance Clinic, Crippled Children, Visiting Nurse Service, Youth Center and Arizona Children's Home are other recipients of gifts and assistance with the funds raised by rummage sales. The Greater Phoenix Growth Committee had six auxiliary members on its sub-committees involving health and safety.

A file of members' affiliations with other organizations has been compiled in Maricopa and Pima counties.

The legislative chairman sent letters and telegrams opposing H. R. 7225 last summer when the bill was being considered. One county assisted its county medical society in securing signers for the pre-marital examination referendum in Arizona, which passed. Another committee attended public hearings on the raw milk bill in the recent Arizona legislature.

The Auxiliary News was sent to every doctor's wife in the state, to the editor of each state auxiliary, and national officers for a total of 800 copies. This is financed from auxiliary funds. Each month articles have appeared in Arizona Medicine, Journal of the Arizona Medical Association, a courtesy we appreciate very much.

It allows us to reach all our members monthly with reports of the work of our county auxiliaries and official resumes of national meetings.

We have a membership of 581, including 44 members-at-large and two associate members, a gain of 50 over last year. We are happy to welcome Coconino County Auxiliary into our number this year.

Our historian has sifted the records of 27 years since the organization of the state auxiliary and is having them bound for more permanent preservation. These volumes are kept at the state medical association headquarters.

Two girls entering St. Joseph's Hospital received full loans of \$400 each from the Student Nurse Loan Fund this year, and another girl at Good Samaritan Hospital, who had had a loan, asked for \$100 more to complete her education. Also another loan is pending. Letters have gone out to all high schools in the state and the chairman is now receiving applications for loans which are due in April. Repayments have, on the whole, been excellent. Since the beginning in 1950, 32 girls have used funds totaling \$9,150. Five girls graduated last fall; two from Good Samaritan Hospital, two from St. Joseph's and one from St. Mary's Hospital. One of these, a Pima Indian girl, has achieved her ambition to work among her own race at the Hopi Indian Hospital, Keams Canyon.

The state auxiliary board supported the nurses in their requests to the board of regents for a collegiate nursing program leading to a degree in Arizona's institutions of higher learning. I am glad to be able to report the first of these collegiate courses will be offered this fall.

We have co-operated with the Joint Committee on Careers in Nursing, meeting with them in Tucson in January. This group included five members of the Women's Auxiliary to the Arizona Medical Association, four members of the Arizona League for Nursing, four members of the Arizona State Nurses' Association, and two members of Arizona Association of Student Nurses. A successful open house was again conducted at the hospitals on February 16 with local newsreels taking films of it for later showing on TV news programs. Also, the film, *Girls in White*, was shown on TV; radio, posters and newspapers called attention to recruitment week. One auxiliary sent packets for counseling students to the high school principals in southern

Arizona. Included in the packet were the schools of professional nursing, program guides for Future Nurses Clubs, Handbook for Counselors and two reprints from the American Medical Association. A first aid class for Future Nurses Club of Yuma Union High School was given. A member of this auxiliary appeared on a TV program with the Pacific area representative of the Red Cross to secure volunteers for a home nursing course. Coconino County worked especially on physical therapy recruitment, and other fields included elsewhere in the state were: practical nursing, medical technology, occupational therapy, medical records and medical social work.

In the field of mental health, contacts have been made in the schools and public libraries of Gila County to distribute the series of letters from the auxiliary to the American Medical Association called *Milestones to Marriage* to seniors in high school. They are already placed in the libraries. We have co-operated with the Governor's Mental Health Research Committee and assisted in the survey of resources in the state. They have also helped mental health groups.

Although the chairman has furnished supplies and worked with state and county civil defense leaders, we find only half of our counties have civil defense chairmen. Members of one auxiliary on the border are continuing to serve in the Ground Observer Corps, and sold about 100 tickets for a mass feeding experiment where 4,300 persons were served in about three hours. Talks before other clubs were given.

An article on school safety in September Arizona Medicine stressing auto safety points brought out at the Chicago conference in visits to each county auxiliary, have been our contribution to the safety program.

It has been most gratifying to work in harmony with the Arizona Medical Association and my splendid board of directors. As a consequence, I have truly found my year as president a rewarding experience. Thank you for the privilege of serving. I wish also to express my appreciation for the assistance so readily given by the national officers and central office of the Woman's Auxiliary to the American Medical Association.

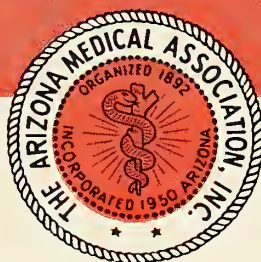
Respectfully submitted.

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Journal of
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Original ARTICLES

Serum Glutamic Oxalacetic Transaminase

Mayer Hyman, M.D.*

Tucson, Arizona

CLINICAL enzymology is not new. For years laboratories have been determining serum amylase, phosphatases, etc. Only recently has an attempt been made to demonstrate the enzymes liberated from heart muscle following infarction. In September 1954, LaDue, Wroblewski and Karmen reported the elevation of serum glutamic-oxalacetic transaminase (SGO-T) after transmural myocardial infarctions.(1) This enzyme causes the transfer of the amino group from aspartate to alpha-ketoglutarate, thus forming glutamate and oxalacetate. In the past few years a large literature on the subject has appeared.(2)

With destruction of any tissue, the cell membranes become more permeable and soluble cellular contents are lost. It has been estimated that 1.5 per cent of the dry weight of pig heart muscle is the protein enzyme, glutamic oxalacetic transaminase, and one gram of dried pig heart homogenate, diluted to six liters, would result in a concentration of 400 units of activity per milliliter. If pig heart muscle and human heart muscle have comparable amounts of transaminase, one would assume that the infarction and death of one gram of tissue would cause an initial increase in the concentration of SGO-T to a value

400 units above the original value. It is now known that other enzymes may be liberated by the destruction of heart muscle, skeletal muscle, liver, brain, etc. In addition to SGO-T, other enzymes having similar clinical diagnostic importance are serum glutamic-pyruvic transaminase, lactic acid dehydrogenase, aldolase and hexose isomerase.(3) In order of decreasing concentration, glutamic-oxalacetic transaminase is found in heart muscle, skeletal muscle, brain, liver and kidney.

The SGO-T will be elevated in over 90 per cent of cases in which the electrocardiogram is diagnostic of myocardial infarction. A slightly smaller percentage of cases, in which the electrocardiogram is not completely diagnostic, will have elevations of the SGO-T.(4) When myocardial infarction occurs in the presence of complete left bundle branch block, the electrocardiographic diagnosis of myocardial infarction may be exceedingly difficult or impossible. In such circumstances the demonstration of an elevated SGO-T may be diagnostic.(5) Congestive heart failure usually is associated with a normal value although severe hepatic congestion may cause enough liver cell damage to elevate the SGO-T concentration.

If skeletal muscle is injured in severe acci-

* From Dept. of Electrocardiography, Tucson Medical Center, Tucson, Arizona.

dents, the transaminase will be elevated in about 50 per cent of cases.(6) For one to four days after surgery, with injury to skeletal muscle, there is usually an SGO-T elevation. Large cerebral infarcts will be followed by an increase in SGO-T in approximately half the cases.

Liver damage, particularly after poisoning with carbon tetrachloride, may cause great elevations, and pancreatitis, in three-fourths of cases, is associated with high values of SGO-T. Although the results in uncomplicated cirrhosis are variable, hepatitis, both serum and infectious, is almost always accompanied by elevated SGO-T values. There are lesser elevations of transaminase concentration in obstructive jaundice and in metastatic cancer of the liver.(7)

Because red blood cells contain large amounts of transaminase, the blood for the test must be drawn without hemolysis. If there are large pulmonary infarcts with hemorrhage and hemolysis, the SGO-T will be elevated and the transaminase determination will not help differentiate between myocardial and pulmonary infarctions.

When the laboratory of the Tucson Medical Center decided to determine SGO-T as a routine test, the following simple pilot study was undertaken. Every patient for whom an electrocardiogram was requested because of chest pain had blood drawn within the next 24 hours for an SGO-T determination. With the method used, the upper limit of normal concentration of SGO-T is 32 units per milliliter. Usually only one test was done on each patient. In several instances, the blood was not drawn until the third or fourth day after the clinical episode. Because the maximum elevations of SGO-T following myocardial infarction may be expected to occur in 18 to 36 hours and normal values may be found within four to six days, an occasional test was performed too late to have any validity.

During the month of November 1956 there was an unusual incidence of suspected myocardial infarction. Of the 307 admissions to the medical services, there were 17 patients for whom electrocardiograms were requested because of chest pain. In 10 the final diagnosis was myocardial infarction. In only one instance was the SGO-T diagnostic before electrocardiographic changes were recorded. Seven patients, on admission, had such striking changes in the initial electrocardiogram that there was a high

degree of probability of fresh transmural infarction. Almost all of these were classical in appearance. One wide-spread anterior wall transmural infarct with S-T segment elevations persisting three weeks, had the highest SGO-T value (230 units). Only one of the patients showing Q waves and S-T segment elevations had a normal concentration of SGO-T and this was probably because he was the first patient to be followed and the blood was drawn at least three days after the onset of pain. The other six patients had elevations of the SGO-T concentration.

The three remaining patients had late evolutionary changes in the electrocardiograms. One of these had an SGO-T elevation and from this finding and the clinical history, the diagnosis was made before the electrocardiographic changes became definite. The other two patients had myocardial infarctions with T wave changes only and single SGO-T determinations made on the second day of the illness were within normal limits.

Of the remaining seven patients, there were two with elevations of the SGO-T value. In one there was a rapidly wandering pacemaker with supraventricular tachycardia and the T wave inversions were attributed to a post-tachycardia effect. It is assumed that microscopic areas of necrosis could have caused the elevated SGO-T value (46 units). Another patient, admitted with congestive heart failure and a cerebral vascular accident, had an elevation of the SGO-T concentration to 70 units.

The last five patients had SGO-T values within normal limits. Two individuals had severe anginal syndrome. Another died shortly after admission and the clinical diagnosis was cerebral vascular accident; the electrocardiogram demonstrated marked T wave inversions at V_3 and V_4 . No autopsy was performed. One patient with chest pain and concomitant gastrointestinal upset, fever and upper respiratory symptoms had electrocardiographic changes consistent with a diagnosis of myocarditis. The final patient in this short series was one with a previously known left bundle block and severe anginal syndrome. On admission there was ventricular tachycardia that was converted to sinus rhythm after retching subsequent to Demerol injection. In spite of prophylactic quinidine there was sudden death several hours later. The SGO-T value was nor-

mal. At post-mortem examination no recent infarction was found. Both coronary arteries appeared congenitally hypoplastic.

After this preliminary information was reported to the staff of the Tucson Medical Center, the determination of SGO-T was done only as a routine examination upon the request of the attending physician. During the next four months the test was performed 91 times in 67 cases.

A final clinical diagnosis of myocardial infarction was made 22 times. In 17, or approximately 80 per cent of these cases, the SGO-T was elevated. One patient who had almost daily determinations of the SGO-T over a period of six days had only a minimal elevation (36 units) although serial electrocardiograms showed evolutionary changes. However, of those five cases in which the value was within normal limits, one was borderline (32 units) and was performed the day following the onset of pain. Another patient had experienced the clinical attack at least four days previously. Three patients had SGO-T values within normal limits, although the examinations were done early in the course of the illness, or were repeated several times. Serial electrocardiograms established the diagnosis in these instances. Thus, in all those cases where the determination was done early or repeatedly, the SGO-T value was elevated in about 80 per cent.

Another group of 17 patients who had been admitted to the hospital with complaints of chest pain was composed of three patients with clinical findings and electrocardiographic changes consistent with the diagnosis of pericarditis, one with myocarditis and 13 individuals with final diagnoses of coronary artery insufficiency or anginal syndrome. Of these 17, only two had elevated values of SGO-T. One had minor electrocardiographic changes and a clinical course consistent with "coronary failure" (48 units). The other elevated value (55 units) had no adequate explanation: pre-pyloric gastritis was diagnosed roentgenologically and the chest pain was attributed to anginal syndrome.

Five patients were admitted because of congestive heart failure. Four had SGO-T values within normal limits. One had a complicating cerebral embolus and the transaminase titer was at the upper limits of normal (32 units). Another admission for congestive heart failure had an SGO-T concentration of 36 units. This was

probably a reflection of severe liver anoxia due to hepatic congestion.

There were 11 patients with final diagnoses referable to the liver, biliary tract or pancreas. Three of these, at the time of admission, had pain suggestive of myocardial infarction. All, however, had normal electrocardiograms and the two with elevated values of SGO-T (920 and 116 units), after observation and study, were discharged with diagnoses of cholelithiasis and cholecystitis respectively. The third, with a normal SGO-T concentration, had evidence of cholelithiasis.

Three patients with hepato-cellular jaundice had greatly elevated SGO-T titers (200 to 370 units).

One patient who was admitted to the hospital because of cholecystitis was found at operation to have a common duct stone and the SGO-T elevation was believed due to pancreatitis. Another patient who had an exploratory laparotomy had evidence of chronic pancreatitis and on the sixth post-operative day had an SGO-T of 64 units.

Of the remaining two patients with hepatic or biliary disease, one had a slight elevation of the SGO-T to 34 units because of Laennec's cirrhosis and the other had an elevation to 96 units as a consequence of common duct obstruction in the immediate post-operative period following cholecystectomy.

A miscellaneous group of 12 cases had normal values of serum transaminase. The determinations were usually requested because of atypical chest discomfort, or in order to establish normal values.

DISCUSSION

In this study there were few instances in which the determination of SGO-T gave diagnostic information that could not be obtained in other ways. Although not encountered in this series, the association of myocardial infarction with left bundle branch block is a notable example in which the diagnosis may be made readily by finding an elevated SGO-T titer.

Unfortunately, glutamic oxalacetic-transaminase is found in many tissues and an elevated concentration of SGO-T is non-specific. Clinical

enzymology will come of age when laboratory methods are found to determine tissue-specific enzymes. Then, the demonstration of an increased serum concentration of an enzyme peculiar to heart muscle may facilitate earlier diagnosis of myocardial infarction. Similarly, an enzyme found only in liver and not in pancreas would refine our diagnostic abilities in the frequently puzzling problem of jaundice.

SUMMARY

1. The serum glutamic oxalacetic-transaminase concentration was determined 108 times in 84 patients.

2. The test may be helpful in the early diagnosis of myocardial infarction, particularly in those instances where the electrocardiographic changes evolve slowly, or are obscured by conduction disturbances (left bundle branch block).

3. Because obstructive jaundice may occasionally be associated with pancreatitis, a serum transaminase elevation in the presence of jaundice is not necessarily good evidence of hepatocellular damage.

4. The SGO-T test should be of limited value until clinical enzymology provides the clinician with determinations of tissue-specific enzymes.

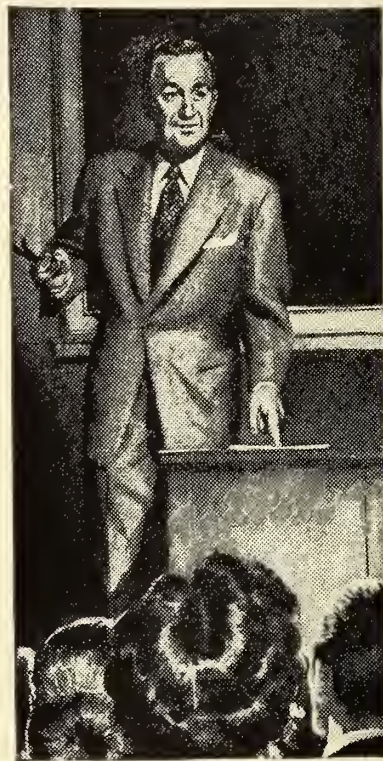
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The author is indebted to the members of the medical staff of the Tucson Medical Center for the privilege of examining the records of their patients. All the SGO-T determinations were performed by Thomas D. Stoops, M.S., Biochemist, Tucson Medical Center Laboratory, without whose help this study would not have been possible.

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Bone Lesions In Disseminated Coccidioidomycosis

J. Wright Cortner, M.D.

J. R. Schwartzmann, M.D.

Tucson, Arizona

COCCIDIOIDOMYCOSIS is a deep fungus infection caused by the inhalation of the spores of *Coccidioides immitis*. These spores are spherules ranging from 10 to 80 micra in size, averaging 30 micra in size, and having a thick doubly refractile capsule. The spherules increase in size in the tissue until they rupture and discharge 50 to 100 minute spores, each of which grows until it, too, becomes a spherule and reaches the sporulating stage in the host tissue.

Coccidioidomycosis is fairly common in its primary form where it is localized to the lungs, called Valley Fever, and is non-fatal. However, in about one case in 500 in Negroes, and one case in 1,000 in whites, the secondary or progressive, or granulomatous type of disease develops. The prognosis in these cases is grave and in different series the mortality rate runs consistently higher than 50 per cent. Again, the prognosis for the dark-skinned race is less favorable than for the white. It is estimated that 20 per cent of the patients with disseminated coccidioidomycosis will develop lesions in bone.

Laboratory confirmation is necessary for a positive diagnosis; the coccidioidin skin test is similar to the tuberculin skin test, but, as in tuberculosis, may not always be positive. Precipitin and compliment fixation tests, however, are positively diagnostic. The fungus may be cultured on Sabouraud's media, or aspirated material may be smeared and observed microscopically, or injected into laboratory animals for a positive test. The microscopic picture of coccidioidomycosis may be identical with that of tuberculosis. The typical spherical bodies with doubly refractile capsule must be seen in order to make the diagnosis. However, many fields may have to be searched before this positive proof of coccidioidomycosis is found. (Fig. 1—The spherical body with doubly refractile capsule is easily demonstrated under high power magnification).

Radiographically, the bone lesions are often multiple and have a predilection for cancellous bone, especially bony prominences. In the acute

stage, radiographically, they are said to appear as cystic areas one half to three cm. in diameter with little if any surrounding sclerosis or periostitis. (Fig. 2—There is a large cyst in the os

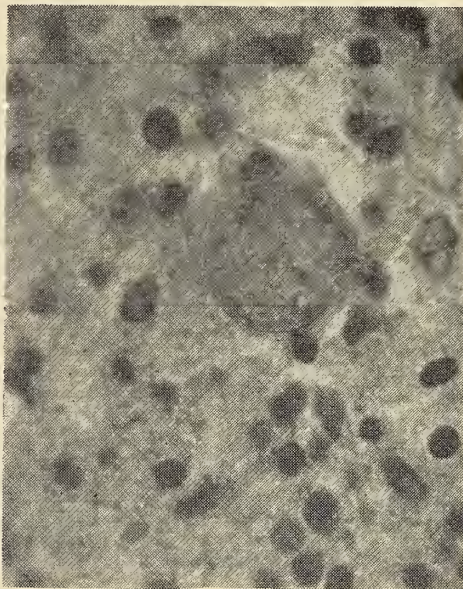


Figure 1

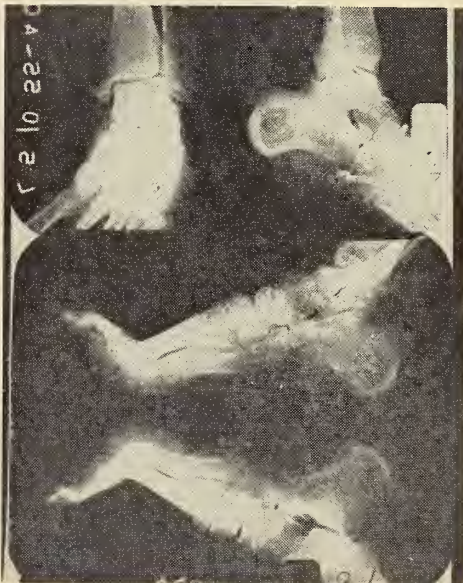


Figure 2

calcis.) In later stages periostitis and bone proliferation are more common and help in the differential diagnosis of tuberculosis, as periostitis is rarely seen in the latter disease. Sequestration is rarely seen in coccidioidomycosis of the bone, and the sclerotic reaction of the bone is seldom as marked as in osteomyelitis.

The present study constitutes an analysis of proved cases of disseminated coccidioidomycosis from Phoenix and Tucson, Arizona, contributed by orthopedists from both areas. These were all cases of coccidioidomycosis of the bone proved either by biopsy, laboratory tests, or autopsy. Most were either diagnosed by, or seen in consultation with, an orthopedist. Some of the records are on microfilm and not all pertinent laboratory work was available. However, where possible the cases were reviewed thoroughly as to age, sex, race, duration of disease, site in bone, laboratory work, treatment and course. In those cases in which the patients had been discharged from the hospital, their local doctors were contacted where possible in order to ascertain their clinical course.

In our series of 22 cases there were 40 known sites in bone; all of these were cancellous. In contradistinction to reported x-ray findings, lesions in this series viewed in retrospect were often not cystic at the earliest time of their appearance. Many showed only mild demineralization for an area of three to 10 mm., with little if any line of demarcation. (Fig. 3—This patient had symptoms but no cyst noted by x-ray). X-rays taken a few weeks to months later then showed the typical cystic area. (Fig. 4—The same patient six months later). We also noted in this series only one case with periostitis. (Fig. 5—Periostitis of the distal femur. The only case of periostitis in 40 sites in bone). Periostitis is supposed to be a differentiating feature from tuberculosis of bone radiographically, but was not found to be so in this series of cases.

Noted with great frequency in the laboratory findings in this series of cases, were eosinophilia, albuminuria, and high sedimentation rate often out of proportion to the patient's apparent illness. (Chart No. 1). In 16 cases where differential blood counts were recorded, eosinophilia of five or more was present in seven of them. In seven of the 12 cases with urinalysis recorded, there was albuminuria ranging from a trace to four-

plus. In eight of the 13 cases where recorded, the sedimentation rate was over 30 mm. per hour and this was persistently elevated. (Chart No. 2). There were 12 cases with differential blood counts recorded whose outcome is known. Of those with five or more eosinophiles, five died and only one lived, and his eosinophile count was five. Of those with eosinophilia below five, all seven patients lived. (Chart No. 3). In 11 cases the sedimentation rate was recorded and



Figure 3



Figure 4

the outcome known. Three died, and these had rates of 85, 130 and 140. Of those who lived, one had a sedimentation rate of 116, one of 36, and the rest all had sedimentation rates of 30 or under. (Chart No. 4).

Comparing the temperature curves against the final outcome, it was found that eight patients whose highest recorded temperature was 100 degrees or below, all recovered. Of six patients whose temperature went to 101 degrees or more, all died. There was one patient whose highest temperature was recorded at 104 who lived.

For the sake of interest, we will mention therapy, mainly since it is so ineffective. However, we do not feel that this series of cases warrants any conclusion regarding drug therapy, as the patients could not be followed long or closely enough. Many drugs have been tried in an attempt to cure this disease in its progressive form. Some of these include sulfa drugs, iodides, x-ray therapy, vaccine extracted from the fungus itself, copper, antimony, thymol, antibiotics of all kinds, and intravenous potassium tartrate. It is generally conceded that none of these is effective; in fact, the fungus has been grown in a culture of Streptomycin and Penicillin. Some of the more recent drugs are Ethyl Vanillate, KC 49, Stilbamadine intravenously (a great many precautions are necessary to prevent toxic neuropathy), Fergon, and THF. Some of these appear to be more effective than the drugs previously used, but accurate results are difficult to obtain due to the small number of cases, lack of adequate control cases, and the occasionally prolonged course of the disease. To obtain adequate blood levels with one of the more promising drugs, Ethyl Vanillate, requires the patient taking 22 tablets every six hours for a total of 88 tablets a day, a physical impossibility in even a moderately seriously ill person because of the gastric irritation which the drug causes. Generally speaking, incision and drainage of the abscess followed by plaster-of-Paris and later immobilization, have been as consistently effective as drug therapy. Of five cases treated with drugs alone, only two are living, whereas of eight of the cases treated surgically, six are still living.

What conclusions may we draw from this series of cases? First, it would appear that for

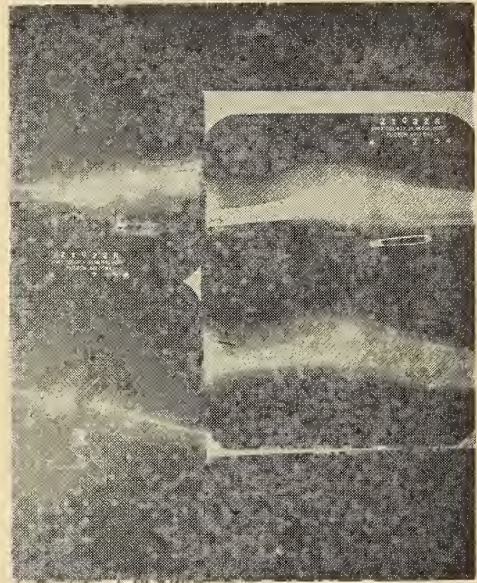


Figure 5

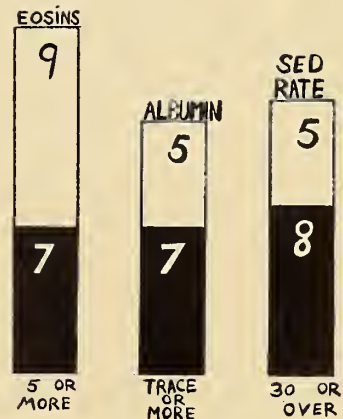
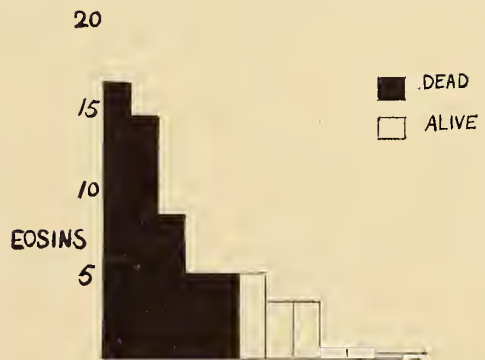


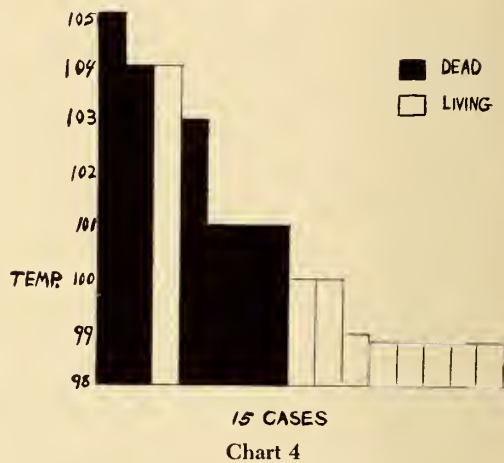
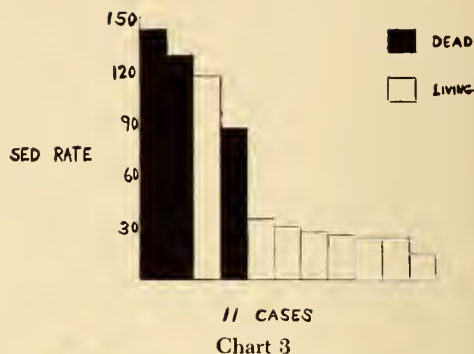
Chart 1



12 CASES

Chart 2

an endemic area such as Arizona, the records kept are entirely inadequate as regards laboratory work and follow-up. It would also appear that the treatment to date that has proved most beneficial is still surgical, i.e., amputation if the disease is localized to an extremity, or incision and drainage of bone abscesses followed by plaster and later brace immobilization. The prognosis appears best in those patients with low sedimentation rates, low temperature curves, and low eosinophile counts. The white race appears to do better than the dark-skinned, and in this series, of the eight colored patients, four are dead and four still alive. Of the five white cases where outcome is known, four are still alive, and only one is dead. Finally, we feel that the diagnosis of this disease may be greatly aided by the findings of a high sedimentation rate, a high eosinophile count, and albuminuria. If these simple tests are suspicious with either a positive or negative coccidioidin skin test, a sample of 20 cc of fasting blood sent to the Stanford University laboratory or any laboratory properly equipped to make serologic studies, will give a positive diagnosis.



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The A.M.A. and Its Stand on Accreditation

By Dwight H. Murray, M.D.

President, American Medical Association

THIS is the first opportunity I have had to speak to a medical association since my return from a four-week tour of naval hospitals and installations in the Pacific. While the trip was most gratifying, it is wonderful to be traveling in the states again — especially in Arizona.

After a first-hand look at medicine in the Far East, I am prouder than ever of American medicine. And I can assure you that American medicine is looked upon by doctors in the Far East as the summit in medical achievement.

I do not wish to imply that good medicine is not practiced in the Far East. There are thousands of fine practitioners and educators in Japan, Formosa, Hong Kong and the Philippines. But they do look to America and to the American physicians to set the pace for the medical world. We therefore cannot rest on our laurels. While we graciously accept the plaudits of our colleagues from abroad, let's dedicate ourselves even more completely to the attainment of greater medical heights for suffering mankind.

You have asked me to talk today about "The American Medical Association and Its Stand on Accreditation. This subject is one of my favorites because of my association with the Joint Commission on Accreditation. So if I talk too long, I hope you will not be too harsh with me. I figure that in the next two and a half hours I can cover the subject adequately! And I promise not to run over that time!

Years ago, the American Medical Association, the American College of Surgeons, and the American Hospital Association all visited and inspected hospitals.

While the A.M.A. never actually accredited hospitals, it at one time did register them on

the advice of the county medical society. However, the A.M.A.'s main function in studying hospitals has been in connection with our internship and residency accreditation program in teaching hospitals.

So at the outset let's remember that the A.M.A. has never accredited hospitals, but it has had programs for accrediting internship and residency training in hospitals, and for evaluating teaching institutions. At the same time I want to make it clear that the A.M.A. does not approve an intern or residency training program unless it is located in an accredited hospital — accredited, that is, by the Joint Commission on Accreditation.

This commission was created in late 1951 after the American College of Surgeons had determined that the costs were too heavy to continue its hospital inspecting and rating service.

To maintaining an adequate and reliable accreditation program, the joint commission was launched by five participating groups — the A.M.A., the College of Surgeons, the American College of Physicians, the American Hospital Association, and the Canadian Medical Association. These five agreed to share a joint budget and to co-operate for the maintenance of sound standards and the continuation of an accreditation system.

Within a year or so, the joint commission of 20 members began to function, with each of the five participating groups having a real stake in the workings of the commission. In less than five years, the commission has made many notable improvements in accreditation.

For example, it has insisted upon high-grade hospital care for all patients, not just surgical patients, and it has placed increasing emphasis on the human factor in hospital care.

*Delivered before the 66th Annual meeting of the Arizona Medical Association, Inc., Stardust Hotel, Yuma, Arizona, April 12, 1957.

In addition, it has abolished the complicated point system of rating hospitals.

Despite its growing importance, the joint commission remains an independent, voluntary and nonprofit corporation. Its accreditation is not compulsory; accreditation is not licensure, police action, to raise the quality of medical care, not by dictatorial methods, but primarily through the self-government and self-evaluation of the medical staff. As Commission Director Kenneth B. Babcock has said:

"The commission is neither a glorified good-housekeeping seal nor a bogey-man policeman. It is a service organization to guide, assist and advise in order to raise standards. I wish you would think of us as assistant rather than an assailant."

Despite its eagerness to do a sound and complete job, the commission heard many complaints in its first years. Some members of the medical profession were unhappy about certain standards, about the commission's methods, and about its surveyors. Friction between physicians and hospitals developed. And more than the usual amount of misunderstanding and misinformation arose because too few physicians read and studied the commission's requirements.

So in June 1955, the A.M.A. House of Delegates established a seven-member committee to review the functions of the joint commission. For one year the seven doctors investigated the complaints against the commission. At the Chicago meeting in June 1956, this committee — known as the Stover committee — made its report to the house of delegates. The report was approved by the house and forwarded to the joint commission for review and action.

In its report, the Stover committee reached 13 conclusions that are pertinent to the subject of accreditation. After studying the Stover conclusions, the joint commission acted on most of the 13 points. On four of them there was full agreement. These points were:

1. Accreditation of hospitals should be continued.
2. The commission is not and should not be punitive.
3. Commission surveyors should work with both hospital administrator and staff.

4. The commission should maintain its present organizational representation . . . six members from the A.M.A., seven from the A.H.A., one member from the Canadian Medical Association, and three each from the American College of Physicians and the American College of Surgeons

On other points there also was substantial agreement. For example, the Stover report urged that new surveyors should receive better indoctrination. In acting on this suggestion, the joint commission simply said that the orientation program for surveyors is being strengthened steadily.

On the recommendation that surveyors should be employed and supervised directly by the joint commission, the 20 commissioners answered that there is no objection in principle that surveyors could be directly employed and supervised by the commission. Whether or not this is done is a decision for each member organization to make, the commission said.

As the Stover report shows, your A.M.A. is in favor of direct employment and supervision.

On another point, the Stover committee said Blue Cross and other associations should be requested not to suspend full benefits to non-accredited hospitals until those so requesting have been inspected. The joint commission concluded that this suggestion pertained to individual Blue Cross plans and therefore it could not act upon it.

So on these seven points there was either full agreement, substantial agreement, or no action by the joint commission.

There was considerably more discussion on the other six major conclusions of the Stover committee. Generally, the joint commission again agreed with the Stover report, but I would like to consider each of these six areas briefly.

1. The Stover committee said it believed that physicians should be represented on the administrative bodies of hospitals. It also urged medical staffs to request their boards of trustees to accept a medical member even if he serves only as a non-voting member.

The joint commission's reply was that close liaison between the the medical staff and the

governing board of a hospital must be maintained. However, its position is that this should be determined locally, and the commission should not state specifically whether physicians should or should not be members.

While the joint commission has decided to let the question of physician representation on the governing boards of hospitals be decided at the local level, it is gratifying to have the commission re-emphasize that close liaison between the medical staff and the governing board is essential. Personally, I feel that good working relationships between physicians and hospitals would be strengthened in every instance if physicians were represented on governing boards.

2. The Stover committee recommended that staff meetings required by the joint commission are acceptable, but attendance requirements should be set up locally and not by the commission.

Although the joint commission did not allow attendance requirements to be determined locally, it did make a major change in its standards for staff meetings. Instead of requiring an average of 75 per cent attendance of the active staff at each meeting, the commission now requires only 50 per cent of the active staff who are not excused by the executive committee of the staff for exceptional conditions such as sickness or absence from the community.

It also decided that each active staff member shall attend 50 per cent of staff meeting unless excused. Formerly, the standards required each staff member to attend 75 per cent of the meetings.

The reduction in staff attendance requirements is substantial, and in my opinion the new requirement is neither too stringent nor too lax on staff members.

3. After studying the issue of general practice sections in hospitals, the Stover committee concluded that the joint commission should encourage GP sections.

The joint commission in turn called for the continuation of its present policy which says a department of general practice shall be an organized segment of the medical staff comparable to that of other staff departments, with certain modifications. It stated further that the local

medical staff should decide whether to establish a general practice department.

Your own A. M. A. House of Delegates pursued this subject of the general practitioner and hospital privileges during its sessions in Seattle last fall. It instructed the A. M. A. members of the joint commission to stimulate action by the commission leading to the warning, provisional accreditation, or removal of accreditation of community or general hospitals which exclude or arbitrarily restrict hospital privileges for generalists as a class, regardless of their individual professional competence where such policies adversely affect the quality of patient care rendered.

However, the house of delegates said this action should be taken only after appeal to the joint commission by the county medical society concerned.

Unfortunately, the joint commission has been blamed in the past for some of the rejections of GPs' applications for staff appointments. It is not the commission, however, that restricts staff privileges, but the hospital board itself that approves or disapproves the appointment on the recommendation of the staff.

It is my hope that the county medical societies and the A. M. A., through its members on the commission, can assist in overcoming the exclusion and arbitrary limitation of the GP's privileges.

... I might add here that the A. M. A.'s representatives on the joint commission always will include at least one general practitioner.

4. Realizing that many critics contended that there was no practical method of appeal for hospitals that fail to receive accreditation, the Stover committee urged the joint commission to publicize its method of appeal.

The commission agreed and said that in the event a hospital is not accredited following a survey, the process of appeal will be explained in the letter notifying the hospital that it has not been accredited.

The original bylaws of the joint commission provide for hearings of appeals, and I believe that with proper publicizing of the method of appeal, there will no longer be misunderstandings at the local level.

5. The Stover committee also recommended that reports on surveys should be sent to both administrator and the chief of staff of hospitals.

The joint commission agreed. Now copies of the covering letter and recommendations sent to the administrator following a survey also will be sent to the chief or president of the medical staff and the president of the governing board.

6. And finally the Stover committee said the joint commission should not concern itself with the number of hospital staffs to which a physician may belong.

Again the joint commission agreed and pointed out that the standards for hospital accreditation do not restrict multiple staff appointments.

These, then, were the conclusions of the Stover committee and the actions taken by the joint commission. For the most part, the A. M. A. suggestions have met with approval.

It is my belief that the Stover report and the joint commission's general acceptance of the report will help to erase most of the serious criticisms of the commission, and will bring about a better understanding of the commission's purposes and its work.

The Stover report, of course, is no cure-all. No single set of suggestions and recommendations by a committee is going to solve all the problems of the joint commission for all time to come. But if it reduces substantially the number of complaints, and aids the joint commission in doing an even better job, then we have taken a giant step forward.

As a member of the commission, I know the organization has not been perfect. There have been errors, but they have not been of the heart. Let's remember that the program of accreditation is worthwhile, and the commission is performing a valuable public service in devising the best possible plan of accreditation. Now and in the future we will need your understanding and your willingness to help if the commission is to succeed.

In many areas of the country the relations between the hospital and physician are most harmonious. In some others they are not. If relations are not good in your area, there are many things you can do personally to help the situation. Here are just a few quick suggestions:

First, every hospital board of trustees and administrator has the problem of running the institution without a deficit. You should recognize this and help to alleviate the problem.

You probably will agree with me that most hospital-physician differences arise from the administrator's search for income that will provide a balanced budget.

Second, you should develop an interest in management problems. Most physicians are so interested in the welfare of their patients, they fail to consider the problems of the hospital administrator and his board of trustees.

Third, it is my belief that in recent years the movement of patients from the home and the office into the hospital for diagnostic and therapeutic care has been excessive. This has resulted in mounting hospital costs. Both patient and hospital would gain, if much greater emphasis was placed on home and office care.

Fourth, you should discipline unethical staff members. Your failure to do so stimulates interference by an aroused board of trustees and administrators.

Fifth, my experience has taught me that negotiations locally within the hospital before difficulties develop into critical conflicts are absolutely necessary. I have known few instances in which a conflict was not resolved in negotiations to the satisfaction of all parties concerned.

These are just a few areas in which we all can help our profession, our hospital and our joint commission. Hospital accreditation is a tough project for any group to undertake, but through pulling together, we can achieve a magnificent system of accreditation.

In the words of Dr. Gunnar Gunderson, first chairman of the joint commission and now chairman of the A. M. A. Board of Trustees:

"This is a voluntary movement representing the best thinking and the best inspiration of five of the most powerful groups in the world dealing with health. We recognize what this will mean to the care of the sick and injured of two friendly nations, Canada and the United States. If our duties are discharged well, the benefits to mankind through our profession, through our hospitals and for our civilization are unreckonable."

THE *President's* PAGE

AT the Yuma Convention, Dr. Dwight Murray, President of AMA, told us that the Joint Commission on Accreditation of Hospitals had adopted most of the Stover report to make local rules regarding staff privileges, health codes etc.

Yet at the same time one Tucson hospital had been denied accreditation after being passed by the inspector and is being threatened with closure of 130 beds. This on the order of the Chicago office.

The doctors need hospital beds. Their patients need hospital beds. Also the hospitals need the doctors and the patients.

In Arizona there is an acute bed shortage, so much so that it is necessary for me to phone three or four hospitals before I can get a bed for an acute emergency. I cite the following three instances occurring in Phoenix during the months of April and May:

Letters were sent to M.D.s saying that if they did not contribute generously to a current fund drive, they could not expect to get beds for their patients.

Secondly "Men who enjoy active status at XXX but who show no definite preference for this hospital and are ambivalent, should be assigned to the associate staff, particularly in favor of those individuals now on the associate staff who concentrate their work and interest at XXX."

Thirdly, an order went out from a hospital administrator to the admitting office and surgery, that until the bed shortage is lessened, no elective surgery is to be scheduled by other than the active staff.

With a closed staff, it is necessary for the hospital to guarantee a bed to every active staff man whenever he calls. Otherwise he is forced to look elsewhere for a bed for his patient.

I propose that all staff doctors should stand and fight for representation on the hospital board of directors. These should be elected by the staff for a term of not more than three years, staggering terms if needed. This would enable the board of directors to get the feeling of the staff and the M.D.s could bring back to the staff the problems of the board of directors. These representatives should not be hand-picked by the administrators.

C. C. CRAIG, M.D., PRESIDENT

ARIZONA MEDICAL ASSOCIATION

Editorial Page

ARIZONA MEDICINE

Journal of

ARIZONA MEDICAL ASSOCIATION, INC.

VOL. 14

JULY, 1957

NO. 7

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CONTRIBUTORS

The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
 2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
 3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
 4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
 5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.
 6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.
 7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.
 8. Illustrations — Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.
 9. Reprints — Reprints must be paid for by the author at established standard rates.
- The Editor is always ready, willing, and happy to help in any way possible.

(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

WHEN SHOULD YOU SUE FOR AN UNPAID BILL?

THE recent issue of MEDICAL ECONOMICS carried an article, "When Should You Sue for an Unpaid Bill?" and offered a check list as to what items to consider prior to filing a suit for collection of the obligation, considering such factors as the ability of the patient to pay, the adequacy of office records, reasonable fees, satisfactory results of treatment, and adequate warning to the patient as to intent for collection.

The prime question remaining is the statute of limitations in Arizona. In our state, an action on an open account expires three years from the date the indebtedness is incurred, or three years from the date of the last payment on the debt in the event any payment is made. An action for malpractice (injury to the person of another) expires two years from the date the action accrues, or two years from the date of injury. An action for malpractice resulting in death (injury to the person of another when death ensues) expires two years from the date of death.

HONORABLE MENTION AWARD

MISS Lillian M. Harris, 1016 West Congress Street, Tucson, Arizona, is to be commended on the honorable mention citation awarded to her during the National Science Fair in Los Angeles May 9 by the American Medical Association. Notice of this award is carried elsewhere in the Journal. It must be realized that the AMA presents only four awards—two "firsts" and two "honorable mentions"—to the students with the best exhibits in the basic medical sciences. These awards are separate from those presented by the Science Clubs of America, Fair sponsors, in the broader divisions of biological and physical sciences.

Miss Harris won her award in competition with 233 students from 40 states. We commend and wish her the best of success in her chosen profession.

The History of Medicine in Arizona

TYPHOID

By N. C. BLEDSOE, M.D.

AS AN intern of the Los Angeles County Hospital, I had the advantage of many physicians in handling many cases of typhoid fever. This was during the years 1902-03-04. Today very few of the younger physicians ever see a case of typhoid. It is so rare that when my nephew's daughter contracted the disease at a girl's camp some four years ago, she was confined in a San Francisco hospital and had some 30 or 40 physicians visit her to see a case of typhoid.

Improved sanitation and vaccination have removed this menace from our list of infectious diseases. There is an old saying that "typhoid is caused by flies, fingers and food." This axiom was forcibly brought to my attention when I first went to Bisbee. As some of you know, Bisbee is in the Mule Mountains and the terrain is all rock, and at the time of my arrival, there was no sewer system. Privies, as you can readily understand, were inadequate to keep out flies. I visited some of the boarding houses at night when the buzzing of the flies was so noisy that it reminded one of a swarm of bees. It was no trouble to realize that flies were a cause of many cases of typhoid. There were no refrigerated cars, perishable food was brought in iced, and many times the ice was melted before it was transferred at Benson for shipment to Bisbee. It is told, and I do not doubt the authenticity of the tale, that when a shipment of fish came into Benson, it was soft, starting to spoil so the agent threw on some saltpeter, re-iced it, and sent it along.

In 1904, the first year I was in Bisbee, there were 150 cases of typhoid in the community. At one time we had over 25 cases in the hospital. All of the doctors dreaded the summer time, as intestinal diseases were rampant and our infant mortality was high. One year after I arrived in Bisbee, a sewer system was installed and the next year we did not have one case of typhoid. This was a perfect example of how sanitation can control typhoid.

It might be of interest to outline our treatment: rest in bed, temperature, pulse and respiration every three hours, liquid diet; twice a week every patient was given a course of calomel, followed by castor oil; salol, 2½ grains, every three hours. Whenever temperatures reached 102 a sponge bath, or some other method was used to reduce temperatures. This, by the way, was a very interesting matter as each nurse had her own way of reducing temperature; hot packs, cold packs, ice bath, tub bath and the so-called Brand treatment. It was interesting to watch the special nurses at County Hospital reduce the temperatures. Our mortality was under 3 per cent.

Hemorrhage and perforation were the two complications most feared. Hemorrhage was treated systemically, perforation by operation, if we could get the patient to agree before peritonitis developed.

It is told that in a certain Massachusetts hospital there was a very sick patient and the doctors were at a loss to diagnose his ailment when an old New Hampshire doctor walked through the ward, sniffed a little and said, "I see you have a case of typhoid fever here." The disease does have a characteristically peculiar odor and some of our predecessors had a keen sense of smell. Thank God this is another disease we no longer dread.

BOOK REVIEW

PRICE'S TEXTBOOK OF THE PRACTICE OF MEDICINE
edited by Donald Hunter, M.D. 9th ed. 1,774 pages. (1956)
Oxford. \$15.

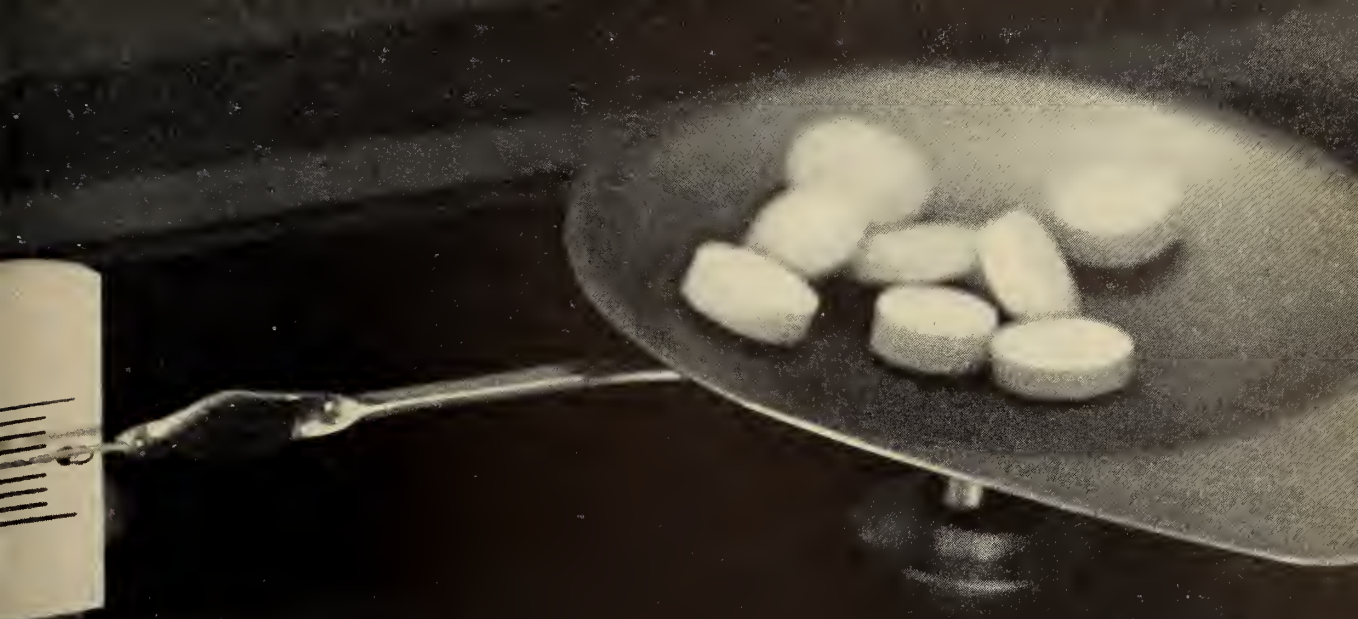
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1. Boger, W. P.; Strickland, C. S. and Gylfe, J. M.: *Antibiot. Med. & Clin. Ther.* 3:378 (Nov.) 1956.

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TOPICS OF *Current Medical* INTEREST

REGISTRATION — 1957 ANNUAL MEETING

| | | Membership | Percent |
|-----------------------------|-------|------------|------------|
| Medical Society | Total | Registered | Registered |
| Apache | 3 | 1 | 33% |
| Cochise | 23 | 2 | 9% |
| Coconino | 14 | 7 | 50% |
| Gila | 19 | 0 | 0 |
| Graham | 7 | 5 | 71% |
| Greenlee | 6 | 0 | 0 |
| Maricopa | 462 | 79 | 17% |
| Mohave | 2 | 2 | 100% |
| Navajo | 6 | 2 | 33% |
| Pima | 243 | 43 | 17% |
| Pinal | 28 | 6 | 21% |
| Santa Cruz | 8 | 0 | 0 |
| Yavapai | 20 | 6 | 30% |
| Yuma | 29 | 21 | 72% |
| Non-Members—Including | | | |
| Guest Orators, VA, Interns, | | | |
| Military, Out-of-State | | | |
| Doctors, etc. | | 41 | |
| TOTAL REGISTRATION | | | |
| OF MEDICAL DOCTORS | | 215 | |

ABSTRACTS COMMITTEE REPORTS 1957 ARIZONA MEDICAL ASSOCIATION

By WALTER HILEMAN, M.D.

THE CONSTITUTION AND BY-LAWS COMMITTEE—W. R. Manning, M.D., Chairman.

RECOMMENDED changes relating to seal of Association, correcting the "grievous error" of using the Staff of Mercury instead of that of Aesculapius. Recommended change of election rules to have officers of the Association elected by majority rather than by plurality. Recommended that the Association by-laws be brought up to date and then each county medical society receive a copy of these by-laws, and attempt to have county societies' by-laws conform to the state by-laws.

BENEVOLENT AND LOAN FUND COMMITTEE—E. A. Born, M.D., Chairman.

No loans have been made because of necessity of changes in by-laws, but details have been

worked out for processing loans and grants when such are feasible. Applicants for loans will be required to insure against loss to the society by securing additional life insurance. The committee recommend that \$500 per year from the association funds be disbursed annually as a scholarship at the University of Arizona for premedical student or students. Plans have been considered for allocating direct grants to members of the association in distress.

NURSING SERVICE COMMITTEE—

Francis J. Bean, M.D., Chairman.

Programs in nursing have been established at the university level both at Tucson and Tempe. A school for practical nurses is to open in Tucson in September 1957. A state chapter of the American League of Nursing was formed in the past year.

AMERICAN MEDICAL EDUCATION FOUNDATION COMMITTEE—

H. W. Kohl, M.D., Chairman.

AMEF in 1956 raised \$1,072,727, approximately one-half of which was contributed by physicians. Of this money, one-half was ear-marked by donors for specific schools. Each school received, in addition to that ear-marked by donors, \$6,850 from undesignated gifts.

During the past year, \$3,057,100 was distributed by the national fund for medical education.

Arizona physicians contributed \$4,893.87 in 1956. This includes \$533 given by individual physicians in addition to that given through the medical association and its auxiliaries. In 1957, \$10 of state dues was ear-marked for AMEF.

HISTORY AND OBITUARIES COMMITTEE—

Howell Randolph, M.D., Chairman.

The committee recommended that historical articles of interest to physicians should be submitted by any interested writers, either to the editor of Arizona Medicine, or to the history and obituaries committee.

MEDICAL EDUCATION COMMITTEE—

D. W. Melick, M.D., Chairman.

This committee plans to publish the results of investigation into the question of a medical school for the state in Arizona Medicine shortly after May 1957.

PROFESSIONAL LIABILITY INSURANCE INVESTIGATING COMMITTEE—

Howard C. Lawrence, M.D., Chairman.

Work is well under way to obtain group malpractice insurance for members of the state association from the Nettleship Company of Los Angeles, acting for the Zurich (Switzerland) Insurance Company. This organization currently insures several California county medical society groups. More information will be obtained as soon as further negotiations have been completed.

WOMAN'S AUXILIARY PRESIDENT-ELECT REPORT—Mrs. Charles Powell, Chairman.

State-wide woman's auxiliary activities for next year include (1) Student nurse recruitment, (2) AMEF donations, (3) wider distribution of Today's Health, (4) attendance at national meetings, etc. A grant of \$1,000 was requested by the auxiliary from the Arizona Medical Association for furthering its work.

SECRETARY'S ANNUAL REPORT—

D. W. Melick, M.D., Chairman.

As of date of report, there were 857 members, 797 of whom were active, 28 holding service and 32 associate membership classifications. This is 30 more than one year earlier. Fifty-seven new members were admitted, and presumably 27 members were lost during that year.

CENTRAL OFFICE ADVISORY COMMITTEE REPORT—

W. R. Manning, M.D., Chairman.

This committee recommended hiring of an assistant executive secretary, because of increasing volume of work in the central office of the association and because of the fact that the office staff is now doing administrative duty for the board of medical examiners (with appropriate salary arrangement contribution by the board of medical examiners). Mr. Paul R. Boykin has been employed, first on a trial basis and more recently on a permanent basis, as assistant executive secretary.

LEGISLATIVE COMMITTEE—

J. D. Hamer, M.D., Chairman.

The extensive work of this committee is perhaps best summarized by the following abstract from the introduction of its report: "The 23rd Legislature of the State of Arizona is entitled to the plaudits of the people for adjourning with the allotted 60 days. It is further recognized that this legislature should be commended for

its accomplishments. The session was not without problems concerning the medical profession, and your legislation committee, legal counsel and staff, devoted considerable time to the review of a multiplicity of measures introduced and took action supporting those approved by council and exerted every effort in the defeat of those which were not in the best interest of the health and welfare of the people."

SAFETY COMMITTEE—

MacDonald Wood, M.D., Chairman.

This committee recommends (1) improvement of driving training in schools, (2) establishment of visual standards, and (3) revision of physical and mental standards for driver licensure.

It recommends that at the annual meeting some time be devoted to physician education in automotive safety. Exhibits or movies on automotive safety would be interesting and should be well accepted at our state meeting.

PROFESSIONAL LIAISON COMMITTEE—

William B. Steen, M.D., Chairman.

At meetings between pharmacists and physicians, the committee recommended that free choice of physician and pharmacist be preserved. The committee disapproved prescription pads with advertising of a specific pharmacy. The committee desired that physicians indicate on all prescriptions whether and how often refilling should be allowed.

OSTEOPATHIC LIAISON COMMITTEE—

Reed D. Shupe, M.D., Chairman.

The committee looked with disfavor on a proposed bill to allow osteopaths to do major surgery after one year's internship. It also disliked a change that would allow dropping "Osteopathic" from identifying designation as long as the initials D. O. followed the physician's name. Many members and others explained the inadvisability of the Glendale Community Hospital having a mixed staff of M.D.s and D.O.s at a meeting in Glendale.

INDUSTRIAL RELATIONS COMMITTEE—

Lindsay E. Beaton, M.D., Chairman.

This committee reports monthly meetings as the medical advisory board to the industrial commission, serving in the final disposition of difficult industrial accident cases. During the past year, rules were drawn up governing consultations scheduled by the commission, requiring that industrial case consultations be

treated with the same ethical considerations as private patient consultations.

As instructed by council, the committee is proceeding with the upward revision of fee schedules, hoping it will be based on the California Relative Value Schedule. Consultations are being held with the various specialty groups regarding the proposed new fee schedule. The committee chairman reports excellent co-operation between the commission and the industrial relations committee.

PUBLIC RELATIONS BOARD—

James T. O'Neil, M.D., Chairman.

This board recommends that the association provide technical professional advice to any labor-management negotiations which may be concerned with health insurance as a bargaining subject.

SELECTIVE SERVICE ADVISORY COMMITTEE—J. M. Greer, M.D., Chairman.

The doctor draft law will probably be dropped at the end of this fiscal year. Last year two physicians were "enlisted" by selective service in the State of Arizona.

MEDICARE

Report Of First Six Months Operations In Arizona

JUNE 7, 1957 saw the completion of the first 6 months of participation by the Arizona Medical Association in the Armed Services Dependents Medical Care Program, enacted by the last congress and signed by President Eisenhower on June 7, 1956 to become effectively operational Dec. 7, 1956. This program of Public Law No. 569 has by common usage been designated as the "Medicare Program."

All probably will recall the uncertainty with which we approached our negotiations and contracting with the department of the army, the administrative unit for the department of defense, on this new plan which seemed to many of us to be an indirect approach into the socialization of medicine. Arizona, as well as the rest of the states and territories of the United States, was completely caught off guard by a) the sudden passage of this law by congress and signing by the President and b) the extremely short time interval allowed for to work out all the operational details, fee schedules, contracts etc. — inasmuch as by the terms of PL 569

itself, it had to be operational by Dec. 7, 1956.

While definitely opposed to the further ingress of governmental on private enterprise and to socialization in general we became reconciled in cooperating with this Medicare program on the following basis:

1. Armed forces representatives, all other government representatives and the law itself states that this was evolved only as a national defense measure — to make it more attractive for many of the highly trained and skilled personnel to remain in the armed services instead of leaving for private industries as soon as their current enlistments were finished. It is to be noted along this line that most large industries, unions, etc., not only do pay much higher wage scales, but also include similar insurance plans in their fringe benefits.

2. This had already become Public Law No. 569 — passed by congress and signed by the President.

We felt that the above being the case, it was far better for us to work with the government but still retaining direct control of the salient medical practices and principles ourselves, instead of having a government bureaucracy try to take the lead and establish the same for us. Remember that the Arizona Medical Association negotiated its own contract and fee schedules, which we feel are most fair and liberal. The government did NOT establish these for us.

In the rapid development of this new program, a type in which neither the American Medical Association or its constituent state or territorial groups, nor the United States Government had had any previous experience in establishing, it follows logically enough that there be some errors, omissions, loopholes, etc. After enough time has elapsed for critical analysis of all these and of the experiences thus gained we can be sure that all of these will be corrected at the time of future renegotiations which tentatively have been placed for February 1958. The time for these renegotiations has been extended to that date at the request of the department of the army, administrator for the department of defense, with the concurrence of the council of the Arizona Medical Association, in order to give an adequate time interval in which full evaluation of the operation of this agreement can be made by both parties.

Under the terms of the contract negotiated by the Arizona Medical Association with the de-

partment of the army in November 1956, Arizona Blue Shield was designated, at a special meeting of council of the Arizona Medical Association as our fiscal agent (to process and pay the claims). I must again point out that there is *absolutely no relationship* between MEDICARE and THE ARIZONA BLUE SHIELD SERVICE PLAN.

Also, according to the terms of the contract, it was required that the Arizona Medical Association establish an arbitration board to arbitrate local disputes, questionable claims, and to guard against any willful violations of the principles and ethical relationships involved in this contract. This was likewise demanded of all the other states and territories. This board by national usage has become known as *MEDICARE - ADJUDICATION COMMITTEE*.

Inasmuch as Arizona Blue Shield, by council action and contract, had already been established as our fiscal agent, it was then decided by further action of council of the Arizona Medical Association that those members of the association serving as the professional board of Arizona Blue Shield be made the members of this adjudication committee with the addition of this writer, Frank W. Edel, as its chairman.

It is the feeling of those responsible for the administration of Medicare in Arizona, namely the council of the Arizona Medical Association and the adjudication committee, that no abuse be made by any of our members in taking advantage of any of the previously discussed loopholes and minor variants in schedule for petty, selfish, personal gain. Outlandish or padded claims will not be cleared for payment, nor will any claims taking advantage of some petty loophole be knowingly cleared. At the same time we will go to bat for any claim of unusual care or circumstance, which by special report seems entirely just and fair to these groups. We feel that the ethical practice of medicine should prevail, for that matter, in any relationships of organized medicine to the public. These Medicare patients should receive the same consideration as your private patients. Likewise your billing should be as considerate and not violate customary principles of honesty to yourself, to the Arizona Medical Association or to the United States of America.

I must reluctantly report that there have been some cases of apparently obvious abuse of the above enumerated principles. It is possible that some of these may have been accidental or

through oversight and misunderstanding. Suffice it to say, however, that any further repetition of same can only be interpreted as deliberate and intentional. This WILL NOT BE TOLERATED. Among these abuses we find the following:

Some doctors submitting claims for consultation fees for such consultations that are standard hospital prerequisites and for which private patients are not billed—such as consultations for D&C and pre-anesthetic consultations. The adjudication committee was chagrined to find this insincerity and attempt to pick up an extra fast buck. As a result the following resolution was introduced and passed unanimously by the council of the Arizona Medical Association at its May 5 meeting. "That all consultations required a standard procedure of hospitals in Arizona who are acting in good faith and in keeping with the principles of the American Hospital Association, involving any procedure such as D&C, anesthesiology or any similar procedure where a consultation is required as a hospital prerequisite, be not compensable under the Medicare Act."

2. Indirect fee splitting refunds to doctors on laboratory charges.

While, for example, the fee schedule allows for \$18 on obstetric routines—we find that certain laboratories have been offering to do the work for varying fees—usually approximately around \$10—offering the doctors a nice fat \$8 kickback by sending patients to them.

Gentlemen—this is out and out FEE SPLITTING and will not be tolerated any more than any other type of fee splitting. After warning, and this article will re-emphasize this, such actions could easily necessitate action by the professional committee of the Arizona Medical Association.

3. Unusual and apparently unreasonable amounts of laboratory examinations, X-rays, drug expenditures.

For the information of all I find it necessary to inform you that the statistical department of Arizona Blue Shield, Medicare Department makes periodical checks and comparisons on all these figures and reports to the adjudication committee. When such work seems apparently out of line with standard practice, special reports will be asked justifying the reasons for this work. If it cannot be justified, it will not be approved for payment.

Fortunately, these offenders have been at the minimum to date. I trust that with the reading of this summary, and with the knowledge that the adjudication committee, backed by the council of the Arizona Medical Association, means exactly what I have said on this, will deter any future offenses.

Another problem which has offered some difficulty has been indirectly no one's blame, unless it is the congress that enacted PL 569 and did not include any provision for direct payment to pharmacists of drug bills. This has resulted in considerable confusion and difficulty, particularly in the care of obstetrical cases where the doctor apparently must underwrite the patient's drug expenses and cannot collect for same until the termination of the pregnancy. This can easily run into quite a sum if a busy obstetrician with large volume of patients has to carry them. All efforts are being made at present to work out some solution to this, and it possibly might even have been effected by the time this article appears in our Journal, Arizona Medicine.

It is impossible, of course, to have the complete statistical breakdown of amounts paid out to Arizona's M.D.s for this entire 6 month period, in time for publication in the July issue. I present the following statistical analysis covering the period Dec. 7, 1956 through May 15 1957, as submitted by Mr. E. Donald Lau, Executive Director, Arizona Blue Shield, fiscal agent for Arizona Medicare.

| | |
|-----------------------|-----------------|
| Total Number of Cases | Total Amt. Paid |
| 2,766 | \$203,283.39 |

Of these

| | | |
|------------------|----------|--------------|
| Maternity—1,145 | (41.40%) | \$103,423.22 |
| T&A—397 | (13.99%) | \$ 19,489.00 |
| All others—1,234 | (44.61%) | \$ 80,371.17 |

Mr. Lau also reports another estimated amount on cases not reported but, incurred in the same period up to May 15, 1957, of \$48,231, which added to the amount of the total already paid, gives us a total of \$251,514.39 in the first 5 months and one week of operations. This is obviously a much greater amount than any previously estimated would occur under the provisions of this plan. This has necessitated three upward revisions in the estimated funds necessary for the administration of this plan in Arizona—all concurred in by action of the Arizona Association's council. It must be remembered that this all started from scratch—in other words neither of the contracting parties had the faintest

idea what amount would be needed to finance the program, once implemented—but could only learn by time and experience. It will be on the basis of this same time and experience that future renegotiations will be made.

We feel that, for the most part, this operation has been moving along comparably smoothly in Arizona. This is in reality a tribute to our membership for the way that they have shown, the majority, an attitude of understanding cooperation.

I wish to thank the membership at large for their cooperation, and especially to thank all committee members, Arizona Blue Shield—E. Donald Lau and staff, our legal adviser "Bud" Jacobson and our efficient central office, Mr. Robert Carpenter—Executive Secretary, Arizona Medical Association and his tireless staff for the great amount of time and personal efforts put into making this rather thankless chore a successful venture on the part of Arizona medicine.

Respectfully submitted,

Frank W. Edelman, M.D.,

Chairman

Arizona Medical Association

Medicare Committee

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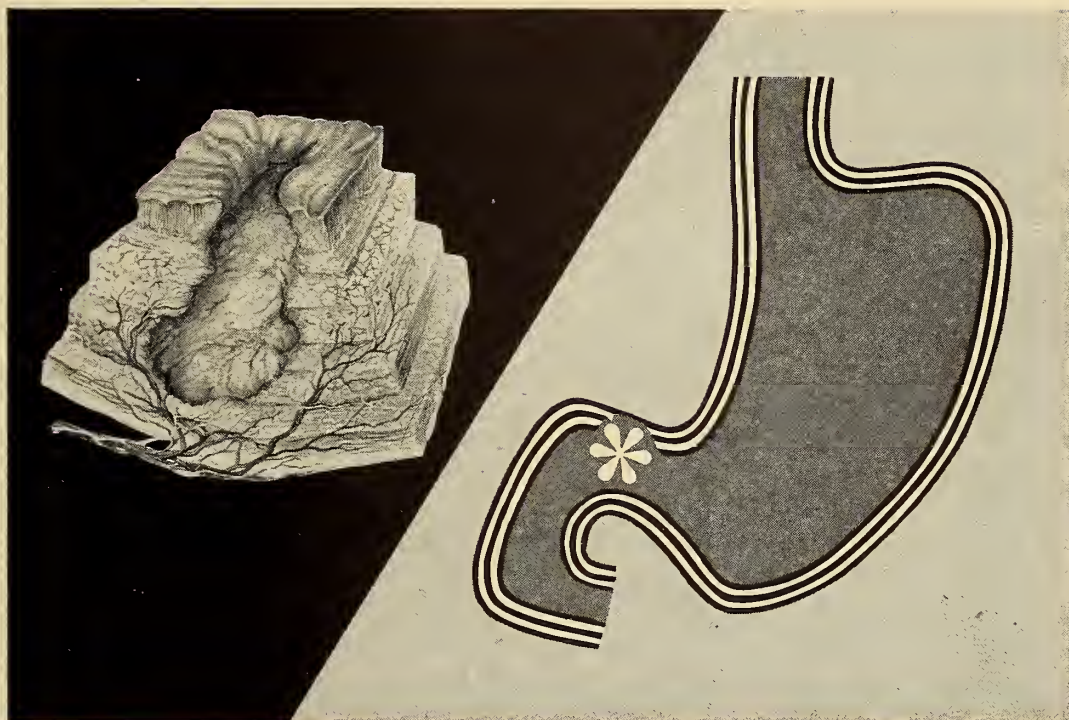
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SEARLE

MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

(La Sociedad Medica De Estados Unidos de Norteamerica y Mexico)

By Frank W. Edel, M.D.

(Report on the progress of this new medical society, including the Hermosillo and Mazatlan meetings.)

THIS report is submitted at the request of Dr. Darwin H. Neubauer, editor of Arizona Medicine, and I must indeed concur with his expressed viewpoints that the evolution and present development of this progressive new medical society of the United States and Mexico should be of the utmost interest to all physicians practicing in the southwestern U.S.A., and in the very near future to the entire United States of America.

A brief recapitulation to bring all of you up to date on the origin, principles involved, the groundwork and other meetings held that led to the excellent success of the Mazatlan charter meeting, is definitely in order.

The origin of this interesting new society must be entirely credited to Drs. Harry Thompson, W. R. Manning, Robert E. Hastings, William Schultz, Leo Kent — all of Pima County and Tucson, together with Drs. Hector Gonzales Guevara, Alberto L. Guevara, Ignacio Chavez, A. Topete and numerous other doctors from Tucson and from Nogales, Magdalena, Hermosillo, Mazatlan and Guadalajara. These men had over a period of several years, formulated close friendships and the idea of this society resulted by natural evolution of events. It was further aided by the interest manifested by the governors of Jalisco, Sinaloa and Sonora, as well as by Governor McFarland of Arizona through his representative, Dr. Norman Ross.

Based on sound concepts, (a) Medicine is a universal common meeting ground and language, when broken down, to care of the ill, and the principles and ethics are greatly similar throughout the civilized world. (b) The increasing intercourse between these two great nations of the North American continent and in particular to us in the Southwest — commerce, tourist travel, improved highways, air travel, etc. — distance means nothing now and the possibility that many disease entities formerly

considered localized to one area may spread rapidly from one to another with the greatly increased travel etc. (c) The desire for all of us to advance our knowledge in general about our neighboring country, to accept advances in treatment of diseases peculiar to either, to aid our colleagues in obtaining these advances and to seek his knowledge and aid under similar circumstances.

With this background, and with all these facts and concepts in mind, as well as the many others so well reported by Dr. Norman Ross in the January issue of Arizona Medicine, the initial founders' meeting was held at Tucson, Arizona Nov. 25, 1956 at 2 p.m. at the Pioneer Hotel.

Forty-four members constituted this founders' group, and it was obvious from the start that all present were determined to make this a successful organization. Dr. Harry Thompson presented a most interesting paper pertaining to the international aspects of medical problems, and Dr. Alberto L. Guevara from the University of Guadalajara promptly confounded all of us with his paper showing the spread of Coccidiomycosis into northern Mexico — further accentuating the importance of this new international society. The necessary committees were appointed at this meeting to get the necessary structural work of the organization underway in order to have mutual understandings as to constitution and bylaws, membership, co-ordination and program development for the future. A meeting, to discuss the constitution and bylaws, membership campaign, programs, etc., was then established to be held at Hermosillo, Sonora on March 16, 1957.

This meeting was held at Hermosillo, on the agreed date, and was unusually well attended. It convened at 10 a.m. at the beautiful new motor-hotel, Very thorough consideration and thought was given to the constitution and bylaws, which had already been thoroughly developed by Dr. Hastings and Dr. Alberto Guevara and Dr. A. Topete. Mutual agreement on all points was easily met and agreed upon. After a splendid luncheon, the afternoon session was featured by outstanding scientific papers by Dr. Van Ravenswaay of Tucson, and by Dr. A. Topete of the University of Guadalajara, College of Medicine — the merit of the papers again proving the soundness of this embryonic organization. In the evening we were entertained

at a most delightful banquet at the Hotel San Alberto, and we must again reiterate our thanks to Gov. Alvaro Obregon of Sonora for his extremely gracious hospitality in our care and entertainment, as well as to the Hermosillo doctors and their wives. This was a most enjoyable meeting for all of us and we looked forward with great pleasure to the renewing of acquaintanceships and the further development of the society at the scheduled meeting for Mazatlan, Sinaloa May 9, 10 and 11, 1957.

The membership campaign for charter members was then launched by Drs. Harry Thompson and Wilkins Manning for the United States and Drs. Guillermo Soberanes, A. Topete, Ignacio Chavez and Hector Gonzales Guevara for Mexico. Under their astute guidance a fairly remarkable enrollment for charter memberships was obtained. At the present time we may officially report enrollment of Maricopa County's 85 charter members. Dr. Harry Thompson reports Pima County has 175 charter members. The membership committee of Mexico estimates 125 charter members. giving us at this time 386 charter members.

It is entirely possible that with further study, some of these memberships may be duplicates. It seems safe to say, however, that a conservative estimate of 300 charter members can be counted, which certainly is a working nucleus toward an effective organization. It is to be remembered that applications for charter memberships will continue to be received up to and including the registration at the next meeting, which tentatively will be held in Tucson the first week in December 1957. Consequently, may I urge all who may have overlooked this opportunity to send application and check to Dr. Harry Thompson, President, Medical Society United States and Mexico — 433-35 Tucson Blvd., Tucson, Arizona. The yearly membership fee is \$5.

The initial general charter membership meeting in beautiful, picturesque Mazatlan proved a tremendous success. A splendid attendance with 42 doctors, wives and guests from Maricopa County, 36 from Pima and nine from other counties in Arizona. Other states represented were California, Oregon and New York. An approximate turnout of 95 representatives from Norteamerica. Our Mexico registration list is not complete, but we estimate about 80,

this is a conservative figure because numerous of our friends were so busy entertaining us that many probably didn't formally register because they were just too busy offering their hospitality to do so.

The meeting opened officially at 12 noon with Dr. Hector Gonzales Guevara, mayor of Mazatlan, greeting us both personally and for the governor of Sinaloa. This was followed by all registrants signing the official charter membership. Then a get-together and get acquainted luncheon in the main patio of Hotel Belmar, which incidentally was the registration and main headquarters of the meeting.

The business session opened at 5 p.m. with Dr. Hector Guevara and Dr. Harry Thompson as co-chairmen. Dr. Alberto Guevara, chief of thoracic surgery, University of Guadalajara, did a masterful job as official interpreter. Thanks to the excellent groundwork established at the previous meeting in Hermosillo, and with an especial word of appreciation for the thoroughness of Dr. Hastings and Dr. Guevara, with some dexterous, astute parliamentary aid from Drs. Harry Thompson and Bill Manning, the entire constitution and bylaws were adopted with remarkable little argument. Following this, the following officers selected by the nominating committee were unanimously voted into office:

President

Dr. Harry Thompson, Tucson, Arizona

Pres. Elect

Dr. Hector Gonzales Guevara, Mazatlan,
Sin. Mex.

Vice President

Dr. Wilkins Manning, Tucson, Arizona

Secretary — U.S.A.

Dr. Juan Honseca, Tucson, Arizona

Secretary — Mexico

Dr. Alberto Ladron de Guevara,
Guadalajara

Treasurer — U.S.A.

Dr. Robert Hastings, Tucson, Arizona

Treasurer — Mexico

Dr. Roberto Morfin Alvarez, Mazatlan

These men had been selected by the nominating committee because of their fundamental and obvious interest in getting this new society started and we can feel sure that they will keep it going.

After this election of officers, the routine committee reports were presented, most of which have been discussed previously. Of interest to all of the readers of Arizona Medicine was the decision by the program committee that all scientific papers will be published in this Journal as the official journal of the organization. The business meeting was then adjourned.

The following day, May 10, proved rather hectic because of numerous extra papers that had to be presented, many of which had not been in the hands of the program committee before, etc. The schedule called for 12 papers. I believe 16 were presented. This rather jammed the scientific session, although the majority of papers were of excellent merit. Session opened at 9 a.m., being called to order by Dr. Harry Thompson, Dr. A. Topete — chief of experimental surgery and cardiac surgery, University of Guadalajara, Dr. Leo Kent of Tucson presided. A luncheon from 12 to 1:30 at the beautiful Playa de Mazatlan gave an interlude to the succession of papers. This perhaps, was unfortunate because I am afraid that the afternoon session did not have as great a turnout as the morning meeting, despite many excellent papers being presented. Despite all of this, it was possible to terminate the meeting on time and the meeting was officially closed by President Dr. Harry Thompson at 6 p.m., after some minor committee appointments were made.

That evening, a moonlight party was held at the Terraza del Paseo Claussen. All again enjoyed this beautiful setting and moonlight night, with weather that was out of this world.

It is impossible to go into all the entertainment features, both scheduled and spontaneous, which our Mazatlan colleagues arranged for us. It is going to be very hard to repay their extremely gracious cordiality and wholehearted friendliness. I can assure you, we shall do our very best to reciprocate.

The final event, held in the Palm Room at the Belmar, given by Gov. Gral Leyva Velasquez was a beautiful climax to a successful initial meeting. Again perfect weather, magnificent sky and moon, special music by a string ensemble from Guadalajara — well, brother, you should have been there.

I, personally had no time for fishing, but I hear from my compadres that "it couldn't be

surpassed." The entertainment for our wives was indeed splendid, according to all to whom I spoke. By the way, ladies, why not form an auxiliary to help reciprocate the entertainment?

The only criticisms were leveled at an unfortunate overcrowding of the scientific session with too many papers. This being the first large meeting, it is easily understandable and I feel sure can be corrected in future meetings.

Please remember that you may still register for charter membership, up to and including the December 1957 meeting in Tucson, Arizona.

I hope I will see you there.

ACTIONS OF AMA LEGISLATIVE COMMITTEE

I N keeping with the editorial policy of Arizona Medicine, herewith are presented the actions of the committee on legislation of the American Medical Association at its most recent meeting. Legislation reviewed was introduced in the 85th Congress during the months of January, February and March 1957. The volume of bills pertaining to and affecting the medical profession increases by leaps and bounds in each congressional session. Most bills are "back door" methods aimed at socialization of medicine. Because of this devious method and the reticence of the average physician to speak out against the moral issues involved, the social planners and spendocrats have managed to enact legislation which has, ipso facto, made deep inroads into the foundation of the private practice of medicine. Witness Medicare, veterans' care for non-service connected disability, certain social security beneficiaries and others. Inspection of the bills introduced under the headings National Compulsory Health Insurance, Social Security, Veterans' Affairs, Health Insurance and Miscellaneous will enlighten the reader in regard to the all out effort being made to effect governmental control of medicine.

Unless each physician soberly considers these facts and acts promptly in accordance with his conscience, the point of no return on the road to total socialization of medicine will soon be reached. Let us be willing to accept our rightful places as intelligent, informed, unyielding defenders of the finest, most cherished profession the world has ever known, the private practice of medicine.

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ARIZONA GIRL WINS AMA AWARD



Miss Lillian M. Harris and Dwight H. Murray, M.D.

ISS Lillian Margaret Harris, 17, a junior at Salpointe High School in Tucson, accepts her American Medical Association Honorable Mention citation and the congratulations of Dwight H. Murray, M.D., AMA president, for her exhibit

on "African Sleeping Sickness" displayed at the National Science Fair in Los Angeles, May 9-11.

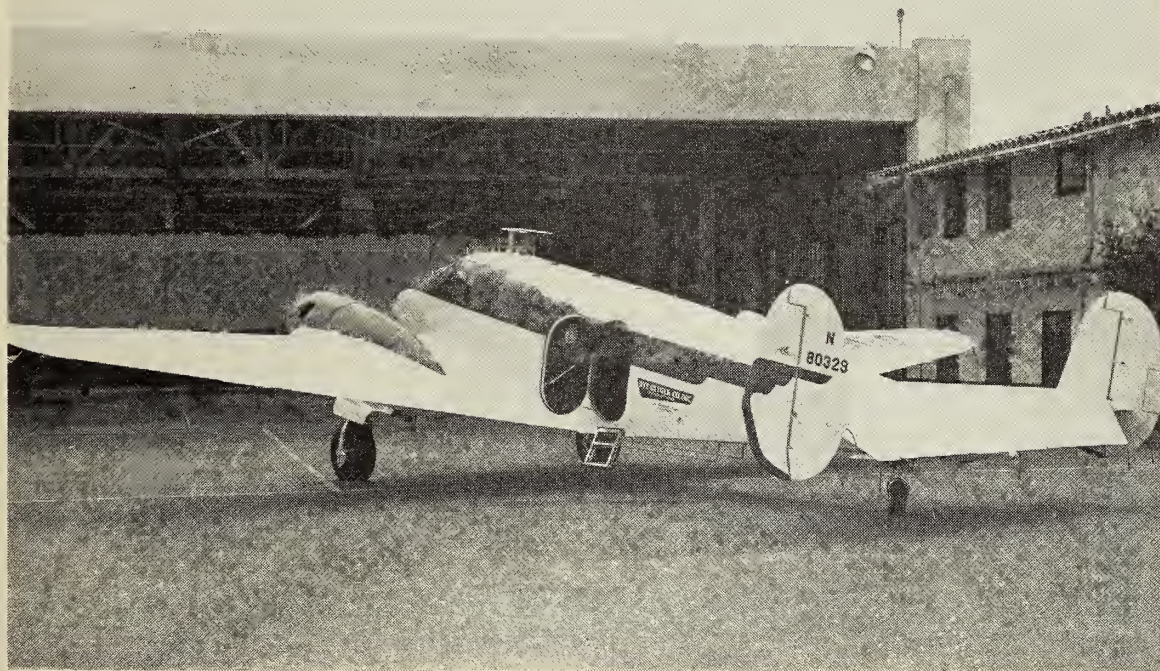
Her exhibit was one of four at the Fair selected by the special AMA judging committee as being among the best in the basic medical sciences, and the presentations were made at a banquet in the Biltmore Hotel given for the 600 Fair participants by the American Medical Association.

Lillian won her trip to the Los Angeles competitions after being selected as a finalist in the Third Southern Arizona Regional Science Fair in Tucson earlier this year. The AMA awards are given at the National Science Fair as an encouragement to talented high school students to enter the study of medicine. Lillian has already planned to enter the University of Mexico to study medicine and hopes eventually to conduct research in neurosurgery. She is the daughter of Mrs. Matilde A. Harris of 1016 West Congress Street, Tucson.

The National Science Fair, in which the AMA has participated for the second consecutive year, is sponsored by Science Clubs of America and is administered by Science Service, Washington, D. C.



Dr. L. Donald Fusco (right) receives certificate of merit from Dr. D. M. Nigro, Kansas City, Mo., President of UNICO, National Italian Service Organization (center) as Dr. Nicholas S. Vitle of St. Louis, Mo., UNICO National Vice President looks on. Award was presented at dinner at Paradise Racquet Club, Sunday, May 26.



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One thousand horrible deaths could be prevented annually in the United States by adequate poison control services.

The first poison control center in the state was developed months ago under the auspices of the Maricopa County Medical Society at 2025 N. Central Avenue in Phoenix (telephone AL 8-6901). The second unit is now in operation at the Tucson Medical Center (telephone EA 5-2661) in Tucson, Arizona. A state center for the collection of information on the toxic nature of poisonous substances and methods for treating cases poisoned by them is planned for Arizona now. Located at the University of Arizona, it will serve the physicians of the state through poison control units in the emergency wards of co-operating and supporting hospitals strategically located throughout the state.

Ready reference file cards will be made available by the center to supplement poison control equipment and reagents available in the hospital on a 24-hour basis. These cards will contain information approved by medical authorities and will list trade names as well as poison ingredients and their antidotes. Sources of this information: The national clearing house for poison control centers, medical journals and texts, and your reports on poison cases you encounter. The latter will be collected on forms provided through the co-operating hospitals. Periodic information bulletins from the poison control information center at the university will be issued to the medical profession in the pages of the monthly journal, *Arizona Medicine*. Public education articles will be released to the lay press as appropriate.

It is inconceivable that all questions regarding poisonings and treatments will be answerable immediately, but as the program grows and information from within and outside the state is accumulated, more effective prevention and control of poisoning is anticipated.

The Tucson Women's Club is making this program its community service project for 1957-58 and will be responsible for collecting approximately \$5,000 to implement the first year's service and for releasing educational poisoning prevention information to the public. The club

is co-operating with the Arizona Medical Association, the Tucson Medical Center Auxiliary, and the University of Arizona in the initial stages of the program.

Willis R. Brewer, Dean
Pharmacy College
University of Arizona
for Poison Control Committee

URANIUM MINER RESEARCH PROGRAM

AN attempt will be made to examine all uranium miners working in the Colorado Plateau area during the summer of 1957. Two U. S. Public Health Service medical teams, operating in trailers, will move from one mining district to another. A physician will examine the miners, a chest X-ray will be taken, and several laboratory tests, including blood and urine analyses, will be made. Two new laboratory tests, sputum cytology and bilobed lymphocyte counts, may be included in an attempt to evaluate their usefulness.

This examination is part of several long-range scientific studies by the U. S. Public Health Service. These studies are designed to determine what effects, if any, working in various industries has on the health of the employees. The uranium mining industry was selected in 1950 as one of the industries to be studied. Since that time, periodic medical examinations have been offered to uranium miners. Each miner will be informed of any health problems found. His private physician will also be notified. If any miner has a condition which requires treatment or further observation, he will be referred to his private physician.

The United States Atomic Energy Commission and the state health departments of Colorado, Utah, New Mexico, and Arizona are co-operating in this study, which is being co-ordinated by Duncan Holaday of the U. S. Public Health Service in Salt Lake City. Dr. Victor E. Archer, also of the Public Health Service in Salt Lake City, is in charge of the medical teams and of the follow-up work.

Medical information obtained in past years by these examinations has proved useful to many miners and local physicians, and has provided an excellent base of knowledge which will be used by Public Health Service scientists in evaluating the medical findings of future examinations. Because of the long latent period of chronic radiation effects, this study must continue for 10 to

20 years. Because of this long latent period, it is still too early to make any generalizations as to the health of uranium miners.

One important phase of the study is the compilation of causes of death from death certificates. The resulting data will, of course, be no better than the information recorded on death certificates. Because of the need of this study to learn of the existence of all serious pathology, and especially the need for precise determination of the cause of death of all uranium miners, all physicians are urged to obtain autopsies on deceased uranium miners whenever possible.

A GENERAL PRACTITIONER LOOKS AT THE SMALL COMMUNITY HOSPITAL

By MARTIN C. FLOHR, M.D.

Williams, Arizona

TWENTY-EIGHT years ago, a green intern from Washington, D. C. arrived in Phoenix to be a resident at St. Joseph's Hospital. Since then, that M.D. has grown older in looks, has put on weight, and finally learned to enjoy life, and to practice a better brand of medicine.

He has seen tremendous advances in medicine, in fact he feels that these have been the fastest advancing years in the history of medicine. You younger men try to imagine practicing without the sulfonamides, the antibiotics and the antihistamines. Also look at the DPT vaccine, tetanus toxoid, ion-exchange resins and most recently, the Salk vaccine for polio.

There have been many changes in medicine, but I believe that one of the most important is the development and improvement of the small community hospital, and I would like to talk about how an admitted general practitioner looks at them.

Twenty-eight years ago, the two hospitals in Phoenix were just a little larger than community hospitals, not too well organized or departmented staffed by a large number of GPs, most of them with a leaning toward some specialty, by self-ordination and self-acclaim, not by training. Very rare was the trained man in those days. Now the Valley is full of trained and certified specialists in all branches. The GP has been driven to a rear seat more and more.

Since coming to Williams, I have noticed an enormous difference between the large hospital and the small community hospital.

To me, the biggest difference is the interest

of the public in the workings and the affairs of the hospital. It is surprising, the questions and suggestions that come from people who would not be considered as ever thinking about the hospital. Here the hospital is closer to the general public.

This community is proud of its hospital, which was factually built by the people with very little federal aid. In fact, in Williams, when the foundations were started, there were 90 men there with picks and shovels, such was the community interest. Just recently, \$20,000 was raised by popular subscriptions. Yes, the public appreciates the community hospital.

In the small hospital, the physician is closer to the patient, closer to the nursing personnel and administration than in any larger hospital.

The patients feel more at home and I certainly feel that they get more personal attention than in the larger institutions. Just let the patient talk some time, and you will be surprised at some of the comparisons that are made with other hospitals, both large and small.

The staff member in the community hospital is, to my mind, closer to the family doctor than in the large places. Here we know if the family has financial difficulties, if Papa is a drinker, if Mama has a boy friend, and all those usually hidden things that make care of a patient quite difficult because they are seldom revealed voluntarily, unless there is an unusually close personal relationship between the patient and the physician.

The small hospital is on the spot, its work must be above reproach. In fact, indications for surgery, indications for instrumental interference in OB and in many medical cases, the care must be much more carefully worked out than in larger institutions where there is always someone to fall back on in a pinch. Here the surgeon or the obstetrician is put on his mettle because all the responsibility is his.

The surgeon must be certain of his indications for going in, the proper preparatory workup is a must, lab work is a must, but certainly not in excessive amounts. The surgeon must be able to cope with conditions as he finds them when he gets in. He must be prepared by training and knowledge to go in for a simple appendix and possibly find a Meckel's diverticulum or even do a partial intestinal resection. Remember, this is all on his shoulders. He can't yell for help and get it in a matter of minutes.

The obstetrician must watch his patient closely, observe her progress, and time his medications so as not to cause foetal difficulty. He must know how, and especially when to interfere. Also when to say, "Let's do a section." With proper pre-natal care, which means observation of urine, weight and blood pressure of the mother, also size and position of the foetus, many difficult deliveries will be avoided. Avoid at all costs what De Lee called "meddlesome midwifery."

The obstetrician must be prepared to pick up an OB at any stage of pregnancy and carry it through to its conclusion in the best manner and to the happiest ending possible.

The internist has a terrific load of the usual run of cases, the rare and unusual are not ordinarily seen in these hospitals, but you must be prepared to diagnose anything from a common cold to tuberculosis and do it without too much expense.

The small community hospital and its staff must be prepared to handle any type of medical, surgical or obstetrical emergency. Here along Highway 66 we have our share of automobile accidents with every conceivable injury. We see many people who became ill on a trip, maybe just a cold, or maybe a diarrhea or maybe TB or ruptured ulcers, frequently altitude effect on a weakened heart.

We staff members don't have a secretary to whom we can dictate our histories, physicals and operative notes. We have to do all the work that is done in larger hospitals by interns and residents and for that reason we get closer to our patients and as a result, also, have a much heavier clerical load.

Remember, we have to live with the people in our community and we have to look a family in the eye even if we get a poor result. We can't duck them as is too often done in a city. We see them too often on the streets.

The small community hospital is looked down upon by our sister institutions in the larger cities, also by the members of those staffs. In the older days, the small hospital in the outlying areas was usually a private affair owned by an M.D., with possibly a younger associate. Only too frequently these individuals were endowed with the guts of a brass monkey with the result that they were in disrepute. Now, however, there are many trained men who work in these smaller institutions by preference. They enjoy living in

a smaller community where the tempo of life is slower and where they can live a more nearly human life. I for one, certainly prefer the smaller town, where we can get away easier and relax and hope to live a longer and happier life.

There is no reason today that the caliber of care rendered in the small community hospital should not be as good and frequently much more personal than that rendered in the larger hospital. We have the trained men who want to live in the smaller towns and who do excellent work.

To consider just one facet of the difference in care rendered in a small community hospital and that in a larger institution, let us look at the care of fractures.

We must admit that the best advertisement that a doctor has is a satisfactory patient. This means that the only advertising that the orthopedist can do is satisfy the patient by a good result and by showing him or her a final x-ray of which he can say "See, the bone is straight, no bowing, no knots on it, it looks just like a normal bone." This is a wonderful thing to be able to do, but it requires many more open reductions than can be safely done in a small community hospital.

There are several reasons for this:

1. The general surgeon hesitates to do an open reduction if it is possible to achieve a good result otherwise. He doesn't want to get the reputation of "cutting on everybody."

2. With one operating room, the small community hospital is at a disadvantage. One day it does an appendix, possibly ruptured, then tonsils, then a hernia, or a GB, or possibly a hysterectomy. All of these procedures are possible sources of infection in the operating room. Also there is usually only one set of surgical instruments and one surgery crew. Also usually the same surgeon does them all. Thus, much chance of cross infection in surgery.

3. Another difficulty is in possible cross infection in the rooms, as there can be no definite separation of cases by space or time to insure no possible cross infection, and we all know that an infected open reduction is one of the surgeon's worst headaches.

Now what does the general surgeon in the small community hospital do? He does as few open reductions as he can. His chief thought is "function." If the patient has an arm or leg that he can use without pain, even with some deformity, we feel that it is as good as a "cabinet

maker's result" with its much longer hospital stay and its attendant mounting costs, with additional anesthetic and surgical risk. (Who can deny that there is such risk?)

I have known many horsemen who were tops in their activities who had short legs, stiff knees and bowed legs that never had any pain or were in any way disturbed by a "non-cabinet maker's result." It must be admitted that we small town folks are behind the eight-ball in these things, because so many of our patients get into the hands of out-of-state orthopods, who by a snort, a sniff, a raised eyebrow or even a "Who in the hell did that?" lead these persons to cast doubt on the work that was done on them locally.

With so many lawyers active and anxious to stir up malpractice suits, and with the big-town orthopods looking down their noses at us, we must be extremely careful in the work we do.

Another facet of great importance in the small community hospital is the added responsibilities placed on the shoulders of the general surgeon.

Consider the automobile accident case. He gets them with the road dirt, gravel and weeds still on them and usually in rather deep shock. His first efforts are to combat shock by stopping hemorrhage, and treating with heat, stimulants and IVs. While this is being done, he considers the injuries, deciding what to do first and how to do it. Also which one of the patients should be treated first.

Later, when the definitive treatment is started is when he is a man of many hats. He must be an orthopod—reduce the fracture, he must be a good neurologist—by determining the extent of the nerve involvement, he must be a vascular specialist—is this condition traumatic angiospasm, venospasm or thrombosis? He must be a specialist in soft tissue damage. Consider the amputation. In determining the site of the operation in order to get the longest limb possible, all procedures to determine this by ganglionic blocks, nerve injection and nerve medications must be used, and used properly.

The general surgeon does everything from minor lacerations to gastrectomies and removal of prostates, providing he is capable of doing these procedures by formal training and experience. His cases in the small community hospital are of the most varied character. Here he doesn't have the orthopod, the urologist, the gynecologist and the neurologist to growl at him

and by staff **direction** turn these cases over to the appropriate sub-specialty of surgery.

Yes, in the small community hospital, the general surgeon is a true general surgeon, and he must be of good training and experience to render the best service to the public, himself and the medical profession.

In closing, let me emphasize two things:

1. Medical, surgical or obstetrical judgement. "When to go in—when not to go in—and when to back out."

2. Know your limitations, don't attempt to do a procedure that you are not definitely capable of doing.

If you emphasize these two things in the care of all your cases, you will sleep better at night and will be able to look at that face of yours when shaving in the morning and not be ashamed of it.

Long live the small community hospital, and may it continue to render the high level of care that most of them are giving now.

THE PHYSICIAN — COUNSELLOR ON NUTRITION

By CLARENCE G. SALSURY, M.D.*
and MARTHA POLLARD**

EXAMPLES of the effects of food habits that do no harm in a day or perhaps a week, but command a penalty with time are not hard to find in any community. This is an opinion expressed by Charles Glen King, executive director of the Nutrition Foundation, Inc., and professor of chemistry, Columbia University.

In this day of higher standards of living, improvement in nutrient content of the national food supply, greater knowledge of nutrition, routine use of vitamin preparations and other food supplements, why need we be concerned about food habits? It may be just because of these seeming safeguards that complacency develops. Also widespread food misinformation, nutrition quackery, ballyhoo of door-to-door vitamin peddlers, and of some food advertising, tend to confuse many who lack sufficient scientific training to distinguish the true from the false.

Teachers, public health nurses and nutritionists are all making an effort to educate children to know and to like recommended foods. They

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**State Nutritionist, Arizona.

also attempt to influence children to select foods considered necessary to meet their high nutritional needs. But the job of helping children develop sound food habits is not one for any single professional group. It requires the best efforts of physicians, dentists, psychologists, nurses, teachers, nutritionists and all allied groups concerned with the health of children.

The private physician can be one of the most influential counsellors on nutrition. This is a plea to him to take advantage of the trust and confidence placed in him to help his young patients build good food habits.

The infant's diet is, on the whole, carefully supervised. This is probably true, for the most part, of the first several years. As children grow older, studies show that food habits become progressively worse until in adolescence, poorly chosen between-meal snacks and skimpy or skipped meals constitute one more problem of this age group. According to Dr. J. A. Johnston of the Henry Ford Hospital, the infant seems to have some sense in selecting foods to meet his needs. But somewhere along the line to adolescence, such instincts as the baby may have had become blunted, and undesirable food habits develop for which the adults in his life may be responsible.

In one recent survey, diet records were evaluated for approximately 60,000 school children in 38 states. Analysis of the records indicated 33 per cent of the diets to be good, 27 per cent fair and 40 per cent poor. Evaluated according to region, the Southwest makes the poorest showing with 21 per cent of the diets rating good, 24 per cent fair, and 55 per cent poor. Granted that Arizona does not constitute the whole of the Southwest, a few surveys of children's diets as well as experience in well child conferences and clinics indicate that the situation here is no better.

Feeding problems often have their beginnings in early infancy. Sometimes over-zealous mothers resort to force, either overt or obvious to induce a baby or young child to eat a food the doctor said he could have now. Public health nurses and nutritionists are frequently asked, "How can I make my children eat vegetables?" It could be that we failed to give these parents sufficiently detailed instructions when vegetables were first introduced. One mother reported that her six-month-old baby would not eat his green beans. When questioned about how

much she tried to feed him, the answer was "A half cup."

Perhaps we assume that parents know more than they actually do about what children need for healthy growth. Many parents know little or nothing of even fundamentals of child feeding, care and training. They are ignorant of what is considered an adequate diet for children. Too many are unaware of the importance of other factors involved in nutrition, such as regular meals, early and regular bedtimes, and a suitable amount of outdoor play with other children. If Tommy won't eat, are these and possible emotional disturbances considered, or are vitamins prescribed before first trying to determine the cause?

Dentists in general disapprove of concentrated sweets, especially between meals. The widespread incidence of dental caries among children suggests the need for nutrition education. And yet, even though "empty calories" are objectionable for other reasons, sweets continue to hold a place of special favor among foods. Sweets are offered by fond relatives as rewards, or bribes, or consolation, or to buy affection. Can that lollipop given after a "shot" really be meant to sooth injured feelings, or to buy favor for "Doc?" If a reward is in order, wouldn't a toy balloon serve the purpose just as well as candy?

Another common treat is the soft drink. Soda pop with its sugar and carbonic acid has been implicated among the causes of dental caries. Parents are sometimes seen sharing a bottle of Coke with an infant in arms. Yet they are indignant when asked whether the baby is ever allowed coffee, and quite surprised on being told that caffeine is common to both. The understandable defense is that the doctor prescribed the drink when the child was sick. If the doctor prescribed it, it can't be harmful. Would it be too much for "Doc" to explain that it is prescribed for a specific purpose in a special condition?

Are parents prepared for the normal periodic losses of appetite? If not, they quite naturally worry. Anxiety may lead to forcing, resulting in refusal to take food even when hungry, and other problems. If a child refuses several meals in succession, are parents helped in locating the real reason, or are vitamins administered just on general principles?

Many adults have poor eating habits. Is this



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considered when a mother complains about her child? Undesirable nutrition practices pass from one generation to the next. When parents breakfast on coffee and sweet rolls, or nothing, their children can't be expected to show great enthusiasm for fruit, cereal and milk.

There is still much to be learned in the field of nutrition. However, "there is enough knowledge now available to help in building a better generation of people with better grown, better developed bodies, greater resistance to infection, and, in general, more vigorous more efficient and longer-lived if the knowledge we now possess could only be incorporated into the living of the great masses of our people—particularly of the children."*

Parents deserve the best scientific advice and all the help we can give to guide them in rearing healthy children.

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USPHS LAUNCHES NATIONWIDE HEALTH SURVEY

A new national health survey is being instigated by the U. S. Public Health Service, according to AMA's Council on Medical Service. The council reports that a household interview survey is being conducted in 330 sampling areas throughout the country. Legislation enacted during the last session of congress authorized the surgeon general of the USPHS to make surveys and special studies of the United States population to determine the extent of illness and disability and related information.

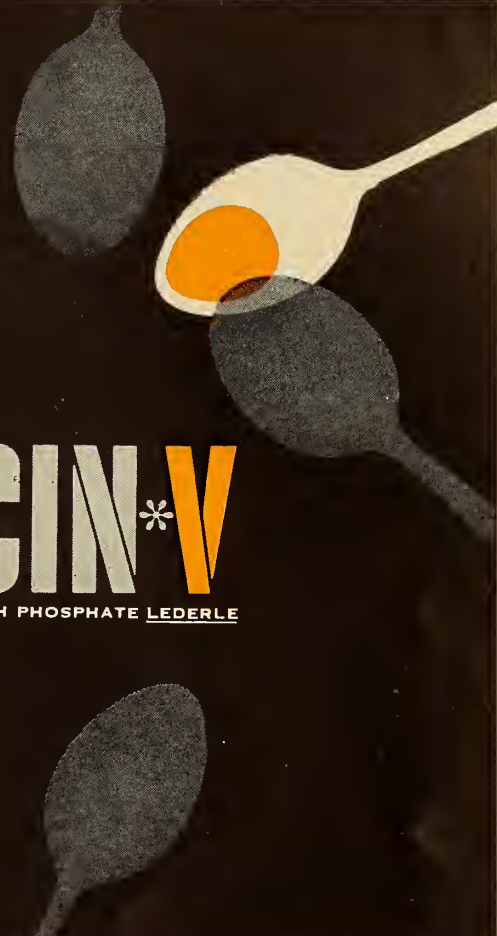
The council stated that the American Medical Association supported this legislation while cautioning that any survey in this area should be conducted in such a manner that all interested parties can agree substantially with its conclusions.

Facts to be collected include statistics on the number, age, sex, and other personal characteristics of persons suffering from diseases, injuries, or handicapping conditions; the length of time that these people have been prevented from carrying on their usual activities, and whether or not the conditions have had medical attention. The last survey of this nature was conducted 20 years ago.

The council also announced that the household interview phase of the survey is to be a continuing study for an indefinite period of time. Field work will be handled by the Bureau of the Census for the USPHS, following primary sampling units already established in counties, parts of counties, combinations of counties, or metropolitan areas. At least one sampling unit is located in every state.

AMERICAN COLLEGE OF CHEST PHYSICIANS

AT the annual meeting of the Arizona Chapter of the American College of Chest Physicians, held in Yuma, Arizona, on April 12, 1957, the following officers were elected: President, D. W. Melick, Phoenix; Vice President, William B. Steen, Tucson; Secretary-Treasurer, Bertram L. Snyder, Phoenix.



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HEALTH INSURANCE

WITH the advance of medical science and the greater accessibility of medical services, medical costs, and even the incidence of diseases may increase rather than decrease, Dr. David B. Allman of Atlantic City, N. J., president of the American Medical Association declared.

In an address before the annual meeting of the Health Insurance Association of America, at the Sheraton-Park Hotel, Dr. Allman said the future extent and cost of illness will depend on many factors. "The advance of medical science," he declared, "will create new diagnostic and therapeutic methods not now foreseen. New drugs will be developed whose effects on the course of human disease will equal or exceed today's 'wonder' drugs. The prolongation of life will increase those diseases of senescence which can be palliated, but not cured. The chronic diseases of aging will increase."

The New Jersey surgeon added: "Ancillary health services—especially in technical fields like chemistry, physics, biology, and others—will induce rapid changes in the incidence of disease." Dr. Allman said "the advance of medical science, and the improved accessibility of medical service, may in fact increase the totality of disease and the cost of diagnosing and treating it."

Dr. Allman told the health insurance executives that these problems must be met by changes in prepayment and insurance mechanisms that permit a reasonable degree of responsibility to be assumed by the patient.

The speaker stated that in those health insurance mechanisms in which the patient himself does not assume a portion of the financial cost, someone else must do it. "It is not without significance that the Blue Cross Commission and the American Hospital Association testified in favor of this administration's health reinsurance bill that properly was buried in committee," he continued. "It can be expected that as hospital rates continue to rise at an anticipated rate of 5 per cent per year, the pressure for increased Blue Cross premiums must also increase. Under these circumstances, it would not be surprising if the Blue Cross sought government subsidy even more vigorously."

From every point of view, Dr. Allman said, the development of major hospital and medical expense insurance has been one of the most encouraging incidents in the history of health in-

surance. He declared he was convinced that the vast majority of physicians will co-operate wholeheartedly in the sense of maintaining equitable fees so that the promotion of this type of insurance will not be impeded. The speaker urged insurance companies to step up their program of physician-relations so that physicians can fully understand the relation between fees and the saleability of major medical insurance.

Summing up the role and responsibility of medicine in the financing of health care costs, Dr. Allman declared that in an economic sense, medicine seeks a price for its service at such a level that its services can be purchased by the public through reasonable financing mechanisms that do not adversely affect the quality of care rendered. From a social viewpoint, he said the physician must oppose any financing mechanism that is a step toward the socialization of the economy. Politically and legislatively, Dr. Allman pointed out, the physician will oppose government programs that assume the responsibility for financing health care costs that are properly and most wisely the obligation and responsibility of individuals.

"In a word," said the speaker, "the physician will support or oppose any program for the financing of health care costs depending on the effect of that program on the quality of the service the physician renders. So long as the insurance you promote," he told the insurance company executives, "is consistent with the maintenance of high quality medical care, you can be assured that medicine will support you."

The Health Insurance Association of America is a trade association of 255 insurance companies in the United States and Canada, representing more than 80 per cent of the health insurance handled by insurance companies in the country. More than 60 million persons today are protected by health insurance policies written by insurance companies.

MAJOR MEDICAL EXPENSE INSURANCE

THE "uncertainty" of the cost of medical care may be a greater concern to the American public than the actual cost itself, James Andrews Jr., director of health insurance of the Life Insurance Association, and vice chairman of the Health Insurance Council, told the Ohio State Surgical

Association at its annual meeting in Columbus, Ohio, May 13.

Mr. Andrews urged members of the medical profession to keep patients informed "to the extent possible" on what medical service will cost them, so that they may "make their insurance arrangements accordingly." In this connection he cited the recommendation of the California Medical Association that individual doctors post fee schedules in their office. He noted also the development in California of a relative scale of surgical values whereby each doctor, using his own dollar standard, will have "relatively the same scale of surgical values as every other doctor."

The speaker pointed out that the elimination of surgical schedules under major medical expense insurance—utilizing instead the contractual provision to pay any "reasonable or necessary charge"—underscores the desirability for "guides" in predicting medical expenses.

Basing his observation on past experience, Mr. Andrews expressed confidence that physicians' fees and charges will not be determined by the presence of insurance, but rather by appropriate "variations in medical care" established by the economic circumstances of the patient and the skill, speciality and overhead of the providers of service.

"Practitioners should recognize the fact," the speaker emphasized, "that insurance does not increase the ability of the patient to pay. The entire insured population is merely using its total existing capacity to pay to balance out among themselves the hills and valleys of medical care expenses. If the doctor raises his fees because of the presence of insurance, he can well defeat the entire insurance process."

Mr. Andrews explained that the incurring of unnecessary expense by the individual is controlled under major medical expense insurance through a deductible feature and co-insurance clause. "The small, regularly recurring expenses," he stated, "should not be insured."

Pointing out that the policyholder would be "trading dollars with the insurance company, and the company would be taking out necessary overhead as the money passes through their hands," he added: "I think any family can assume that they may have as much as \$100 worth of medical care in a given year, with variations one way or the other, according to the number of dependents of the breadwinner."

Major medical insurance—providing benefits up to \$5,000, \$7,500 or \$10,000—protects against almost all types of medical expense, both in and out of the hospital, and including such costly items as special duty nursing costs and charges for drugs. The deductible provision eliminates small claims, and, therefore, the disproportionate administrative expense associated with them. Under the co-insurance clause, the company pays 75 per cent or more of the expenses of treatment up to the benefit limit of the insurance.

Mr. Andrews declared that there are a "number of influences" affecting the development of major medical, and, "in a sense holding it back." He cited in this regard the reluctance of some unions and employers to endorse this type of coverage as a fringe benefit, attributing it in the former case to a preference for full payment protection. In the case of the employer, he is "used to his old type of coverage," Mr. Andrews explained.

Despite these deterrent factors, the number of people holding major medical expense insurance policies doubled during the past year, the speaker pointed out, and have now "reached the 10-million mark."

BLUE SHIELD AND THE MEDICAL SOCIETY

EVERY doctor has a personal responsibility for the success of his Blue Shield plan, and a direct opportunity to take part in its control. For the first, basic requisite of any nonprofit prepayment plan that wants to use the name and symbol "Blue Shield," is that the plan be formally and continuously approved by the state and county medical societies in its area of operation.

Another requirement, no less basic, is that a Blue Shield plan's medical policies and schedules of payment be determined by physicians.

Blue Shield is in fact our own chosen mechanism for making our services more readily available, through prepayment, to our patients.

As such, one would expect the relations between all Blue Shield plans and their sponsoring medical societies to be as intimate and understanding as between the members of any well-run family.

A recent survey conducted jointly by the public relations department of the AMA and the professional relations staff of Blue Shield med-

ical care plans indicates that relationships between the plans and their local medical societies in general are excellent, and they have improved most notably in the last few years.

Similar questionnaires sent simultaneously to the plans and medical societies brought prompt responses from 75 per cent of the plans and 78 per cent of the societies. Of these respondents, 94 per cent of the plans and 89 per cent of the medical societies reported good or excellent relations with one another. The interesting fact that in three cases, the plans though their relations with the medical society were excellent while the society reported them to be poor, and in three other cases, the contrasting opinions were reversed, only proves that we are dealing with people.

When this questionnaire probed a little deeper into the specific character and methods of liaison, however, it revealed some sizable areas of weakness and some attractive opportunities for improvement.

For example, only 51 per cent of the responding plans and 58 per cent of the medical societies reported that they maintain "a specific liaison committee" between them. That some of these committees have not exactly rendered conspicuous service is suggested by the fact that in six cases, the plan and the medical society disagreed as to the very existence of a liaison committee between them. As might be expected, there was a strong correlation between the areas where liaison committees are operating, and the areas where the mutual relations are of the best.

Other specific questions related to jointly sponsored meetings for doctors' office assistants; the inclusion of Blue Shield information in the medical society's orientation program for new members; the setting up of co-operative mechanisms for the use of medical society mediation committees to handle patient complaints; and jointly sponsored indoctrination programs for medical students, interns and residents. In each of these areas of potential co-operation, a majority or a very sizable minority of the respondents reported no action as yet.

If the American doctor needs Blue Shield, it is equally true—if not more so—that Blue Shield needs the American doctor. Without his guidance, Blue Shield might become something quite different from what the profession wants it to be. Without the doctor's support and active participation, there would not even be a Blue Shield.

BOARD OF MEDICAL EXAMINERS STATE OF ARIZONA

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The Board of Medical Examiners of the State of Arizona at a regular meeting held Saturday, April 20, 1957, issued certificates to practice medicine and surgery in this state to the following doctors of medicine:

Alexander, Theodore O., Safford, Arizona; Blustein, Herman, Arizona State Hospital, Phoenix, Arizona; Carriker, Frederick R., 1430 N. 5th Street, Phoenix, Arizona; Champaign, S. Delos, El Coronado Shop, Sierra Vista, Arizona; Cohen, Martin, 1832 8th Ave., Yuma, Arizona; Collings, Thomas S., 6029 Rose Circle Drive, Phoenix, Arizona; Donoghey, Charles J., 603 N. Travis, Sherman, Texas.

Eddy, Warren D., Jr., 7021 N. Taos Place, Tucson, Arizona; Erman, Seneca L., Indian Hospital, Tuba City, Arizona; Estes, Hubert R., 6611 Travis Street, Houston 25, Texas; Ferry, John D., 250 N. Water Street, Decatur, Illinois; Goodrich, Frank H., 1603 N. Tucson Blvd., Tucson, Arizona; Guarino, Christopher A., 744 N. Country Club Road, Tucson, Arizona.

Hagerman, Ralph D., 521 W. Glenrosa, Phoenix, Arizona; Hanauer, Samuel M., 618 Bondi Bldg., Galesburg, Illinois; Karp, Leon M., Magma Hospital, Superior, Arizona; LaMaster, Hugh, Box 1676, Clifton, Arizona; Lofdahl, Charles M., 1921 W. 109th St., Los Angeles 47, Calif.

Lopez-Plascencia, Jose G., Maricopa County Hospital, Phoenix, Arizona; Lowell, Edward J., 1612 Tremont Place, Denver 2, Colorado; MacLean, Donald B., 878 Second, Muskegon, Michigan; Plum, George E., 1603 N. Tucson Blvd., Tucson, Arizona.

Price, Hermon T., Jr., Pima County Hospital, Tucson, Arizona; Simons, Bernard W., Jr., 81 Palmdale Avenue, Dale City, California; Straub, Daniel L., San Manuel Hospital, San Manuel, Arizona; Tammen, Henry, 44517 Leatherwood Ave., Lancaster, Calif.; Tedford, Jack M., 39 West Maryland, Phoenix, Arizona; Weeks, Byron T., 130 S. Scott Street, Tucson, Arizona.

NATION'S FAMILY DOCTORS SUPPORT BELEAGUERED BRITISH COLLEAGUES

AMERICAN family doctors lined up solidly behind their colleagues across the sea. British physicians, caught between spiraling costs and the ministry of health's refusal to grant a promised salary increase, are currently threatening to resign from the National Health Service.

Pointing out that the British medical care plan has failed miserably and put medicine on a mass production basis, the American Academy of General Practice today urged British family doctors and specialists to resign from the NHS. The statement, issued at the Kansas City headquarters office, came from Dr. Floyd C. Bratt, Rochester, N. Y., chairman of the academy's Commission on Public Policy.

In 1951, the NHS arbitrarily decided that all family doctors should earn the equivalent of \$6,200 a year. Since then, the cost of labor has risen 35 per cent and the doctors want a more modest 24 per cent increase. They have been offered a token 5 per cent.

Reports that British physicians are planning to strike are misleading, Dr. Bratt pointed out. The doctors do not plan to strike. Instead, they simply plan to resign from the NHS. This would mean a return to fee-for-service care. Instead of billing the government, doctors would bill each patient.

"Physicians and patients in this country should remember that a person requiring medical care can't be put on an endless belt and treated like a production line item. He needs individualized care and treatment. This is impossible when the doctor's waiting room is overflowing with people who don't really need a doctor and are only there because it's free," Dr. Bratt said.

"Under the British system, the doctor is supposedly free to decide how many patients he can treat. In practice, this is a myth. If the doctor doesn't push patients out the door, he can't earn enough to pay his expenses," he added.

Dr. Bratt pointed out that the British physician can't afford to spend more than six minutes with each patient. In this time, he is expected to examine the patient, make an accurate diagnosis, and discuss subsequent care and treatment.

"British doctors are now convinced that they can't trust the NHS. It makes promises and re-

fuses to keep them. I am convinced that the NHS can be held responsible for the confusion that exists today. A more serious consequence has been lower medical care standards," Dr. Bratt said.

"We can be grateful that we can still select our own doctor and rely upon him to provide the finest medical care today available in any part of the world," Dr. Bratt concluded.

INTERNATIONAL COLLEGE OF SURGEONS ANNOUNCES AWARDS IN OBSTETRICS & GYNECOLOGY

THE Division of Obstetrics and Gynecology of the United States Section, International College of Surgeons, announced that two awards will be made for the best manuscripts not exceeding 5,000 words submitted by Dec. 1, 1957. The first prize will be \$500 and the second \$300.

Contestants must hold the degree of Doctor of Medicine from an accredited college of medicine, and (1) be interns, residents or graduate students in obstetrics and gynecology, or (2) be teachers of obstetrics and gynecology. Fellows of the college are not eligible.

The two successful candidates will be asked to participate in the scientific program of the Division of Obstetrics and Gynecology at the 1958 annual congress of the United States and Canadian Sections, International College of Surgeons.

Details of the contest and the forms in which the manuscript must be submitted may be obtained by writing Dr. Harvey A. Gollin, secretary of the Committee on Prizes, 55 East Washington Street, Chicago 2, Ill.

"The purpose of this contest is to advance the art and science of obstetrics and gynecology, in accord with the principles of the International College of Surgeons and with the aims of the college to extend the frontiers and elevate the standards of all branches of surgery," Dr. Raymond J. Pieri of Syracuse, N. Y., chairman of the Committee on Prizes, said.

AMERICAN PSYCHIATRIC ASSOCIATION

Dear Doctor:

We are pleased to announce to the medical profession that the American Psychiatric Association has set up a project to study ways by

which a greater understanding of psychiatry can be conveyed to physicians in general practice. The project has been made possible by a grant from the National Committee Against Mental Illness.

The project will be administered at the central office of the American Psychiatric Association under the medical director. Dr. Charles E. Goshen will be the project director. Dr. Warren C. Johnson, assistant to the medical director, will also contribute to the work. A liaison committee with the American Academy of General Practice will serve the project in an advisory capacity. This committee comprises, for the APA, Dr. Robert A. Matthews, Harrisburg, Pa.; chairman; Dr. Merritt W. Foster, Jr., Richmond, Va., Dr. Morris Herman, New York City, Dr. Frank H. Luton, Nashville, Tenn., Dr. Phineas J. Sparer, Memphis, Tenn.; and for the AAGP, Dr. Andrew S. Tomb, Victoria, Texas, chairman; Dr. E. Irving Baumgartner, Oakland, Md., Dr. Lawrence E. Drewrey, Camden, Ark., Dr. I. Phillips Frohman, Washington, D. C., and Dr. Richard H. Gwartney, San Bernardino, Calif.

The liaison committee has proposed that the general urgent need for expanding psychiatric services in communities throughout the nation can most readily and practicably be met by general practitioners if they can be armed with appropriate basic knowledge of psychiatric skills and practices. Ways must be explored to accomplish this—by setting up model post-graduate courses, developing standards for training, training films, course materials, and above all a broad promotional effort which will stimulate the general practitioner's interest in psychiatry and community action in this area.

We shall need your co-operation in this program. At the outset we would much appreciate word from you concerning experience you have had in psychiatric education work with general practitioners, and what you and your organization would like to see developed along this line.

DANIEL BLAIN, M.D.

Medical Director

1785 Massachusetts Ave., N. W.
Washington, D. C.

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A new dramatic film pointing up ways of preventing professional liability claims and suits

is available for medical society meetings. This new film titled, "The Doctor Defendant," is the second in a series of films on various medicolegal problems being produced by the William S. Merrill pharmaceutical company in co-operation with the American Medical Association and the American Bar Association. Bookings may be arranged through AMA's film library.

NEW "AMA IN ACTION" BOOKLET

AN attractive new booklet describing "AMA in Action" as it moves ahead toward better medicine, better patient care, better distribution of medical services, better informed public, and better public health was off the presses in June. This 44-page, illustrated pamphlet points out various AMA services for physician-members and the public and lists benefits to both the medical profession and the general public. Copies of "AMA in Action" will be sent to AMA officers, trustees and delegates, national opinion leaders, medical schools, and pharmaceutical representatives. In addition, limited quantities will be made available to state and county medical societies for distribution to their key officials.

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DR. LEWIS H. HOWARD, HEALTH CHIEF, DIES

DR. LEWIS Hoagland Howard, Tucson-Pima health officer for 24 years, died suddenly April 6, 1957 after being taken to a hospital. He was 62.

Dr. Howard, who came to Tucson in 1924 after suffering a health breakdown caused by mustard gas in World War I, fell seriously ill again in March 1954. He remained in his office in an advisory capacity, until the time of his death, under Dr. Esther M. Closson, present county health officer.

The health troubles of the physician and civic leader here began near World War I allied front lines. Working around the clock on wounded men carried in from the trenches reeking of mustard gas, Dr. Howard had no time to protect himself from breathing the vapor.

Dr. Howard was graduated with highest honors from the University of Maryland Medical College in 1916. He served his internship at Baltimore's Mercy Hospital.

In the next four years, he changed his plans twice. He had planned to enter private practice for a few years, then branch into diseases of children. The United States entered World War I, however, and he became a front-line surgeon. He performed emergency surgery with the tank corps under the late Gen. George S. Patton, then a major.

After the gassing, hospitalization and discharge, Dr. Howard changed his plans again. He decided to make army surgery his career. The army turned him down.

He went to a small West Virginia town where his father, a Methodist minister, had a church, and opened his private practice. There in 1920 he married his wife, Hannah, who survives him.

In 1924 his health broke completely. Doctor friends corroborated his own diagnosis—tuberculosis, as a direct result of the inhalation of gas in France.

The Howards came to Tucson. Six years of careful living, complete rest and inactivity here arrested his tuberculosis.

The city decided it needed a health officer. Dr. Howard accepted the position.

Three months after he took the city job, he accepted a similar position with the county. This

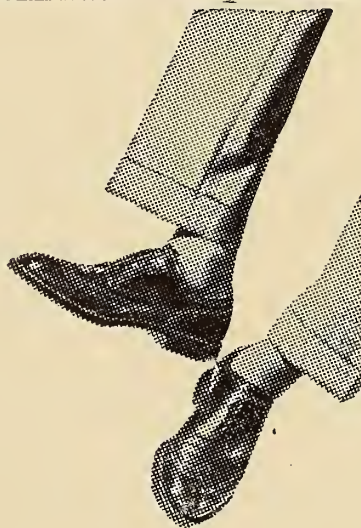
set-up led to the dual city-county operation, which was in effect for many years.

The new department accomplished many notable things in public health, on a trial-and-error basis, since there was no pattern to follow in the West.

For example, Dr. Howard was instrumental in having the American Legion bring into the state mobile chest X-ray equipment. Dr. Howard's clinics, prenatal, well-baby, sick-baby; venereal disease and tuberculosis, have been widely copied.

He was proudest of his role in lowering the county infant mortality rate. The infant mortality rate is about one-eighth of what it was 20 years ago.

The Delaware-born physician held office in the American Legion, Masonic lodge, American Medical Association and American Public Health Association. He was active in all phases of civic-social activity. He received further education in public health at the University of California in 1939.



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THE world's "oldest and newest city"—Istanbul, Turkey—will welcome the 11th general assembly, WMA, Sept. 29 to Oct. 5, 1957. Your membership in the U. S. Committee of WMA makes you eligible to attend as an official observer. Two official tours, one "around the world" and the other through Middle Eastern countries are available to those who are interested in extending their visit beyond Turkey.

AMERICAN HEART ASSOCIATION

The annual meeting, Oct. 25 through 29, 1957, and the 30th scientific sessions commemorating the tercentenary of William Harvey, Chicago, Illinois.

11TH ANNUAL POSTGRADUATE ASSEMBLY

San Diego Postgraduate Assembly, San Diego County Hospital, San Diego, Calif., Sept. 18 and 19. J. Haddon A. Peck, Jr., M.D., 525 Hawthorn Street, San Diego 1, Calif.

CANCER SEMINAR

The 1958 Cancer Seminar, Tucson Inn, Tucson, Arizona, Jan. 23, 24 and 25. Guest speakers: Dr. J. Barrett Brown, plastic surgeon, Barnes Hospital, St. Louis, Mo.; Dr. A. N. Arneson, oncological gynecologist, St. Louis, Mo.; Dr. Ian Macdonald, oncological surgeon, Los Angeles, Calif.; Dr. Ross Golden, radiologist, Los Angeles, Calif.; Dr. C. F. Lehman, dermatologist, San Antonio, Texas; Dr. Arthur Purdy Stout, pathologist, New York; Mr. E. Dale Trout, physicist, General Electric Corporation.

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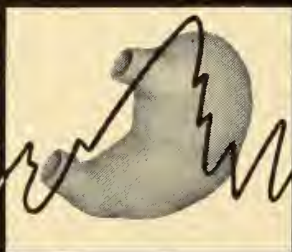
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SEARLE

PHOENIX *Clinical* CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL

PRESENTATION OF CASE 41351

A 59-year-old woman entered the hospital because of jaundice.

Seven months before admission after her husband died of a "heart attack," the patient became depressed, lost her appetite and began to lose weight. Two and a half months before admission, Thorazine (chlorpromazine) was prescribed and was taken by mouth for approximately two weeks. The dosage was not known, but the patient had consumed about 60 pills. In the ensuing weeks dark urine, light stools, and eventually jaundice developed. These signs were not accompanied by pain, discomfort, nausea, vomiting or increased anorexia. She was admitted to another hospital, where a diagnosis of hepatitis was made, and she was sent home on a high-protein, high-carbohydrate diet. Weight loss continued (25 pounds in the eight months before admission); jaundice fluctuated in intensity, but never completely cleared; the urine became lighter, and the stools darker. Marked pruritus accompanied the jaundice.

Three years previously, the patient had had an attack of midline abdominal pain, which began at night, radiated to the back and one shoulder and was relieved by medication. Radiologic studies revealed a normal gall bladder; no stones were seen. One year before admission, a second attack of pain had its onset in the morning, but was relieved by rest. The pain was midline and substernal and was "not quite the same" as the previous episode, but it was attributed by the patient to the gall bladder. Medical attention was not sought on this occasion. She had been treated with "iodine" for thyrotoxicosis in the past, but had not received any treatment for several years. Her father had had diabetes. She denied the use

of alcohol or exposure to toxic chemicals. There was no known exposure to others with jaundice or liver disease.

Physical examination revealed a well developed, poorly nourished woman in no distress. Jaundice was marked, and there was evidence of recent weight loss. Multiple healing excoriations were noted over the legs, arms, and back. The scleras were also icteric. A Grade Three systolic murmur was loudest in the fourth left intercostal space, but was heard along the entire left sternal border. The upper edge of the liver was percussed at the sixth intercostal space, and the inferior edge was felt three cm. below the right costal margin in the midclavicular line. The liver edge was sharp, smooth and soft.

The temperature was 98° F., and the pulse 92, and the respirations 20. The blood pressure was 140 systolic, 80 diastolic.

On urinalysis, there was a three plus bile test; two red cells and 10 white cells per high-power field, with frequent small clumps of white cells, were present in the sediment. Examination of the blood revealed a white-cell count of 7,100, with a normal differential and a hemoglobin of 13.4 gm. per 100 cc. On smear, a slight macrocytosis was noted, but the platelets were normal. The total serum bilirubin was 22.4 mg., the alkaline phosphatase 9.5 units, and the serum amylase five Russell units per 100 cc. The prothrombin time was 12 seconds (normal, 13 seconds); cephalin flocculation was negative, at 24 and 48 hours; thymol flocculation was negative, and thymol turbidity was 2.8 units per 100 cc. The blood Hinton test was negative. The guaiac test on gray stool specimens was negative. The urinary urobilinogen was 1.31 Ehrlich units. An upper gastrointestinal series was normal.

On the fourth hospital day, an operation was performed.

DR. KENT THAYER

We have a lady who apparently has an obstructive jaundice as evidenced by the laboratory results. She showed bile in the urine, markedly elevated serum bilirubin, elevated alkaline phosphates, but normal serum amylase, prothrombin time, cephalin flocculation, thymol turbidity, and urinary urobilinogen.

The most common causes of obstructive jaun-

dice are gallstones and cancer of the head of the pancreas. This lady had a normal gall bladder x-ray three years before; however, this does not rule stones out. She had a history of abdominal pain that could certainly be interpreted as gall bladder colic three years before and one year before present episode. However, with the onset of jaundice she had no pain. Evidently the obstruction was not complete for the jaundice varied as did the color of the urine and stools, also she showed normal urinary urobilinogen. If a common duct stone was present, there was no infection, for she had a normal temperature and white blood count and differential, which seems a little unusual with jaundice lasting one or more months. No x-ray was taken of the gall bladder on this occasion which seems reasonable to me in the face of an obstructive jaundice.

Cancer of the head of the pancreas may be silent and the jaundice gradually and progressively appearing. This type is unrelenting and the degree of jaundice usually does not improve. When obstruction is complete, there is no urobilinogen in the urine and with a patient as jaundiced as is described in the protocol, her obstruction should be complete. Also against the carcinoma of pancreas, is a normal hemoglobin, also the upper gastro-intestinal x-ray evidently showed no change in the duodenal loop. A carcinoma of the Ampulla of Vater is almost completely ruled out by the absence of blood in the stools.

Infectious mononucleosis we will mention only as a cause of jaundice. There is nothing to suggest it here.

Infectious hepatitis may give liver function test of obstruction early in the disease, particularly when the biliary canaliculi are involved. However, after the jaundice has lasted as long as it has in our patient, the prothrombin time should be elevated, and the cephalin flocculation and thymol turbidity should have been positive, showing cellular damage. The same is true for homologous serum hepatitis.

The patient evidently had some cardiac changes since she had a loud systolic murmur. One might think of severe cardiac failure with marked hepatic congestion as a cause of jaundice, or infarction in the lung causing jaundice. Neither of these would be acceptable in our patient.

Thorazine causes jaundice in about 1 per cent of individuals taking it. The onset is

usually four to 14 days following the ingestion of the tablets. Quite often the patient first has malaise, then fever, anorexia and later jaundice. Pruritis may be a major complaint. The jaundice lasts from four days to two months, and eventually clears, leaving a normal liver. The diagnostic positive tests are elevated serum bilirubin and alkaline phosphatase in presence of other normal liver function tests. Liver biopsy is quite diagnostic, showing bile thrombi, no dilatation of bile capillaries (which would occur from common duct obstruction), exudative cells, including eosinophils around the intralobular cholangiol, edema of the parietal triads.

The cause of Thorazine jaundice is probably a hypersensitivity reaction, which causes edema of the biliary canaliculi and increased viscosity of the bile, thereby causing obstruction to bile flow. These patients may show a peripheral eosinophilia, but also may not.

It is my impression that this lady had a Thorazine hepatitis and the operation performed was a liver biopsy.

DIFFERENTIAL DIAGNOSIS

Dr. Rita M. Kelley: The problem resolves itself into the etiology of jaundice in a middle-aged woman. The history of the way in which this disease appeared, the pruritus, the physical findings of excoriations and the slightly enlarged, presumably non-tender liver, and above all the laboratory data point unequivocally to an obstructive as opposed to a parenchymatous type of jaundice. I do not believe the details about the remote past history have any relation to the present illness. In any patient, of course, with a history of thyrotoxicosis, particularly one in whom the treatment was in no way curative, — unless this iodine was radioactive, and I do not believe it was, — one is always suspicious of recurrence of thyrotoxicosis particularly after emotional trauma. The weight loss, depression and loss of appetite could be explained on the basis of resurgent thyrotoxicosis, unrelated to the jaundice. Jaundice does appear occasionally in rampant thyrotoxicosis, but I think it would be extremely unusual in this situation. Because of the absence of any further pertinent historical details and the complete disregard of the thyroid gland, or ramifications thereof, on the physical examination, I think that the person who abstracted the history is leading me away from thyrotoxicosis and that this had no relation at all to the present situation.

I should like to confine my discussion to the causes of obstructive jaundice. There are three diagnoses to consider: common-duct stone; cancer, either primary in the pancreas, the biliary tree, or the Ampulla of Vater or possibly secondary, with pressure against the ducts causing obstruction; and intrahepatic biliary thrombotic disease secondary to the administration of chlorpromazine. I am ignoring rare causes of obstructive jaundice such as strictures and parasitic infestations certainly, and I believe that a diagnosis of benign stricture of the biliary tree can be made only at operation.

Three years before admission, this patient had an attack that was most suggestive of biliary disease in its onset, its localization, and so forth. This attack could certainly have represented the passage of a stone into the common duct or possibly just a transient inflammatory process in the gall bladder. The normal cholecystogram shortly after that attack militates against a gall bladder full of stones although we know that a normal cholecystogram can be obtained in the presence of several very small stones. Possibly the patient had a solitary stone, which was passed at the time of the pain. The second attack of pain was not characteristic of gall bladder pain, however, it is well recognized that gall bladder disease can stimulate angina. I assume that this attack was not well documented, and I cannot believe that it represented gall bladder disease in the absence of further history. The majority of patients with common-duct stones give a past history of symptoms referable to the gall bladder. Many have had so-called indigestion or dyspepsia for years; often they have had right-upper-quadrant discomfort, and many have had one or more attacks of frank biliary colic with or without transient jaundice. Pain is a predominant feature of common-duct stone in about 80 per cent of cases; the patient under discussion did not have pain with the recent attack. However, we are all well aware of so-called silent stones, which with ball-valve action can cause fluctuating icterus with changes in the color of the stools and urine. On the basis of the history, I cannot rule out definitely a stone in the common duct as the cause of the patient's present picture.

A malignant process must be strongly considered in a woman of 59 years, particularly with a history of weight loss. At present the

old dictum that painless jaundice differentiates carcinoma primarily of the head of the pancreas or of the gall bladder or biliary tree from a stone in the common duct is no longer accepted; it is now believed that nearly all patients with a stone and also nearly all with blockage caused by tumor eventually have pain. If this was a malignant process, the chances statistically are that it was not a carcinoma of the head of the pancreas, which is very rare in females, but much more probably a primary carcinoma of the gall bladder or of the biliary tree. Carcinoma of the gallbladder is almost always seen in association with stones; again, to make this diagnosis, I should like to have a history of evidence of gall bladder disease in the past. Also with a malignant lesion, icterus is usually steadily progressive rather than fluctuating. These tumors do not slough and therefore are not accompanied by a transient lessening of the icterus. When icterus has been present for more than a few weeks, I should expect the stools to be totally acholic; yet I am told that the stools were becoming darker rather than lighter — another point against the totally obstructing type of carcinoma. In carcinoma of the head of the pancreas one would expect an even greater weight loss and more progressive cachexia than this patient demonstrated. Such patients often lose 25 pounds in a few weeks. I assume that this patient had a slow, steady loss over an eight-month period.

A carcinoma of the Ampulla of Vater could explain the symptoms. That lesion often presents as primary painless jaundice, which is often fluctuating, because this tumor tends to slough into the opening of the duodenum, with temporary relief of the obstruction accompanied by lessening of the icterus, darkening of the stools, and lightening of the urine. However, a patient with enough sloughing of the tumor to result in lessening of jaundice, is usually anemic because of the blood loss associated with the sloughing and often has intermittently guaiac-positive stools. Therefore, although the patient's anorexia, weight loss and age favor a malignant process, I do not believe that she had a primary malignant tumor in the pancreas, gallbladder, biliary tree or Ampulla of Vater. I have no reason from the available data to suspect that she had a secondary tumor, with metastases in lymph nodes pressing on the common duct. Nor is there any reason to suspect

that she had a lymphomatous process.

The third diagnosis worthy of consideration is the iatrogenic disorder engendered by administration of chlorpromazine, which has enjoyed worldwide popularity because of antiemetic properties and tranquillizing effects. In the past few months there have been several small series of cases of jaundice among the many large series of patients treated with chlorpromazine. For some strange reason, this complication has been more evident in the short time since the drug came into wide use in the United States than it was in the past several years during which the drug had been used in Europe. Icterus characteristically appears after two or three weeks of therapy with varying dosage. It may be preceded by mild grippe-like symptoms and a slight fever; it may be accompanied by marked pruritus, or may be totally asymptomatic except for icterus. Laboratory studies reveal a classically obstructive type of jaundice, with an increase in the bilirubin, seldom exceeding 15 or 20 mg. per 100 cc., however; an elevated alkaline phosphatase; bile in the urine; and light stools. The tests of parenchymal hepatic function are invariably normal; there is no evidence of permanent damage to the liver. A few of these patients have had a transient eosinophilia, which the patient under discussion did not have. At exploration, the extrahepatic biliary passages have been found to be perfectly normal, and the biopsy of the liver has revealed a picture identical with that seen in the patients who have become icteric while taking methyl testosterone. There is simply a blockage of small biliary radicles with bile thrombi and bile stasis, surrounded by varying degrees of inflammatory reaction. In most of these cases the icterus has subsided within three weeks of the cessation of Thorazine therapy; however, in a few patients, it has persisted for as long as five months. Although the patient under discussion was somewhat more icteric than most of these patients have been and the fluctuating nature of the jaundice is disturbing, I believe that she was suffering from the type of biliary blockage caused by chlorpromazine. I base the diagnosis on the time of the appearance of the icterus and the fact that the symptoms did not increase markedly at the time that she became jaundiced. The weight loss and anorexia can be adequately explained on the basis of a reactive depression, which began after the death

of her husband; I do not believe I need to take them into consideration in the explanation of the icteric process. I have no feeling of security in this diagnosis, and if this were my patient, I should certainly invite operation to be sure that with jaundice of such long duration, she did not have a stone in the common duct.

I have not looked at the x-ray films. In this situation negative information will be of no help; positive information might be of some assistance.

Dr. C. C. Wang: I am afraid I cannot help you. The gastrointestinal series is perfectly normal; there is no evidence of varices in the esophagus; the stomach and duodenal cap are normal; the duodenal loop is not widened; and there is nothing to suggest a space-occupying lesion in the head of the pancreas.

Dr. Kelley: Is there anything in the area of the gall bladder that could be stones?

Dr. Wang: There are no calculi that I can see.

Dr. Jacob Lerman: Do you know exactly when the jaundice and signs of liver disease developed in relation to the consumption of the pills? It is not clear in the protocol.

Dr. Daniel S. Ellis: As near as I remember, the jaundice developed after the patient had been taking chlorpromazine for two or three weeks. The pills were stopped immediately.

Dr. Lerman: There is an article in a recent issue of the *Lancet* (1:1144-1147, 1955) describing 800 patients treated with chlorpromazine. The authors found that about 8 per cent of the patients manifested toxic symptoms and 1.5 per cent jaundice. They make the statement that the jaundice developed only while the patients were taking the drug, and not after they had stopped taking it.

Dr. Ellis: In some cases jaundice has developed a week after the drug was stopped.

Dr. Lerman: I, too, have seen such a patient.

Dr. Moses M. Suzman (Johannesburg): I have seen a patient in whom jaundice developed after chlorpromazine was discontinued, but it disappeared after a while.

Dr. Farahe Maloof: You are sure that this patient stopped taking the drug?

Dr. Ellis: Yes; she did stop taking it.

Dr. Maloof: Jaundice might appear a day or so after the drug was stopped; there might be a delayed reaction, as with penicillin. It is dif-

ficult to believe that it would develop that long afterward.

Dr. Bernard M. Jacobson: It is not possible that the patient already had an elevated bilirubin before she noted jaundice?

Dr. Benjamin Castleman: That is the reason why patients who receive chlorpromazine should have tests for bile in the urine while they are being treated.

Dr. Jacobson: I happened by accident to do a bilirubin determination on a patient of mine who was taking chlorpromazine. It was high, so that we stopped the drug. The patient did not look jaundiced, and did not complain of any symptoms, until three days later.

Dr. Maloof: What is the shortest time in which the jaundice has developed after treatment?

Dr. Ellis: It has been reported to appear within two days to three weeks of the first administration of the drug. There must be considerable doubt about the etiology of the jaundice when it appears quickly in two days. On the other hand, there are enough cases now in which other causes of jaundice have been eliminated to make one believe that the jaundice may occasionally develop within 24 to 48 hours after the start of drug therapy.

Dr. Suzman: May I ask whether the blood lipids were determined? I ask this because in the case I saw recently, the blood lipids, including the cholesterol, were extremely high.

Dr. Castleman: Does that not occur in any case of long-standing obstructive jaundice?

Dr. Suzman: Yes; but this was short-term jaundice. I have seen it in a patient whose jaundice was less than two months.

Dr. Jacobson: There is no report of the cholesterol level in the record.

CLINICAL DIAGNOSIS

Jaundice from chlorpromazine.

DR. RITA M. KELLY'S DIAGNOSIS

Intrahepatic biliary blockage as result of chlorpromazine therapy.

ANATOMICAL DIAGNOSIS

Bile stasis, as result of chlorpromazine therapy.

PATHOLOGICAL DISCUSSION

Dr. Castleman: This patient was seen by Dr. Ellis, who wrote as follows before the operation:

"I think the patient has an obstructive type

of jaundice and not a vital hepatitis. Whether it is the type of jaundice caused by chlorpromazine, or that resulting from extrahepatic biliary obstruction, such as a stone or neoplasm, I cannot tell, and I find no clues in the record to help me. In view of the fact that she has been ill for two months, I think that she should be explored, a cholangiogram done, and the common duct drained if no obstruction is found. I believe that there is no urgency about operating on her. It would be wise to prepare her for a week and then go ahead if no contraindication appears by that time."

He ended by saying, "This patient has a small liver. The edge is sharp, smooth and soft. I shall bet on chlorpromazine as the cause of the jaundice as opposed to stone or tumor."

Have you anything more to add, Dr. Ellis?

Dr. Ellis: No; that sums up my opinion about her before operation. I believe that there was no urgency in operating on her, for we might have found that the jaundice had subsided if we had waited. On the other hand, she had been jaundiced for over two months without any significant improvement, and there was no real reason to believe that there would be improvement. Therefore it seemed wise to plan surgical exploration.

Dr. Castleman: She was operated on by Dr. Claude E. Welsh; at operation he found no evidence of any extrahepatic obstruction. All the ducts and the gall bladder were normal; there were no stones. He believed that the jaundice probably was due to chlorpromazine and took a biopsy of the liver. Microscopically, the liver showed dark-brown areas of canaliculi plugged with the bile thrombi. These thrombi were especially numerous around the central veins, which are the areas affected in obstructive jaundice. There was no cellular reaction around these areas of bile thrombi. The only clue that we, as pathologists, have that the findings may not be the result of extrahepatic obstruction, when we see an aspirated needle biopsy and are told nothing about the patient, is the lack of inflammatory reaction which is usually seen if the stasis is due to a stone or a tumor obstructing the common duct. In some of the cases of chlorpromazine jaundice that has been present for a long time — there are patients who have been jaundiced seven or eight months — we do see some cellular reac-

tion. During the last three months we have had three cases of chlorpromazine jaundice; those biopsies showed a similar picture.

Dr. Ellis was at the recent Atlantic City medical meetings at which several papers on this condition were read. Would you tell us about it, Dr. Ellis?

Dr. Ellis: Two papers were presented at the meetings in Atlantic City. Gambesica et al., gave a clinical report of five cases of this type of jaundice, manifested by abrupt onset of malaise and fever. The laboratory data were important in that most of the patients had eosinophilia, hypercholesterolemia, increased serum bilirubin, and increased alkaline phosphates, with a normal flocculation test, normal albumin-globulin ratio, and normal protein. The physicians believed that, because of the abrupt onset with malaise and the high eosinophilia, this was probably a hypersensitivity reaction. The other paper was by Menging, Grindlay and Cain, of the Mayo clinic, who have done some interesting experimental work in dogs. They cannulated the common bile ducts in dogs and recorded the ductal pressures for several weeks to determine the normal pressures. Then, after they had administered large doses of chlorpromazine, they believed that they could demonstrate definitely increased intraductile pressures and decreased motility in the duodenum. They wondered whether or not the increased spasm of the sphincter of Oddi and the decreased duodenal motility might lead to increased intraductile pressure and thereby to jaundice. I do not think that that is substantiated clinically because in the patients who have been operated on — this woman and two other patients in this hospital — cholangiograms taken at the time of operation or soon thereafter showed no dilatation whatsoever in the biliary tree; if anything it was smaller than normal. In addition, the gall bladders were almost without bile and, in two cases, were wrinkled and shriveled, without bile. It is difficult for me to understand why, if there was increased intraductile pressure, the bile duct was not dilated and the gall bladder did not contain a great deal of bile.

About the point that Dr. Jacobson raised — that liver damage may be asymptomatic in patients who have been taking chlorpromazine — someone in the discussion reported 278 cases in which that drug has been administered. Five

per cent of the patients had abnormal liver-function tests without clinical jaundice; in 1 per cent jaundice developed.

I have talked with several people who have a great deal of information about this problem. It seems that about 1 per cent of the patients receiving chlorpromazine have had clinical jaundice. The drug is not always innocuous, but in most of the patients the jaundice does disappear. The patient under discussion, whom we believe to have had jaundice from this source, after three months is still jaundiced and significantly incapacitated. Even more serious outcomes have been reported. I think chlorpromazine carries a real hazard, and one that we have to take into consideration every time we prescribe the drug. It certainly should not be prescribed for simple nausea.

A physician: I have heard that jaundice is less likely to occur if the drug is injected rather than taken by mouth. Have you any comment on that?

Dr. Ellis: I am told by the people who make the drug that this is true.

A physician: I should like to ask if there is any evidence about what happens to the biliary tree once the jaundice has disappeared. Does that become normal again?

Dr. Castleman: Yes; the liver reverts to normal. Biopsies have been taken during the phase of chlorpromazine jaundice, and again after the jaundice has disappeared.

Dr. Ellis: That brings up another point — namely, how can one tell beforehand whether one is dealing with this type of jaundice or with obstruction? Physicians at the meetings said that they could differentiate this type of jaundice histologically, the characteristic findings being edema around the cholangioles in the portal spaces and eosinophil infiltration in the liver. However, when I pinned those physicians down after the meeting, they admitted that in 50 per cent of the cases they could not tell. If one cannot tell in 50 per cent of the cases, the differentiation is not very satisfactory.

Dr. Castleman: A biopsy showing bile stasis without any evidence of an inflammatory reaction would make me lean toward a diagnosis of chlorpromazine jaundice rather than extrahepatic obstruction; obviously, this is not foolproof.

Dr. Ellis: Certainly, in any acute case in

which jaundice was present from one to three weeks, I believe a needle biopsy should be done before an exploration. In a patient such as this, in whom jaundice has been present over two months, I think an exploration is the only way to establish the diagnosis.

Dr. Suzman: Have you any evidence that the bile-thrombi formation was due to changes in the composition of the bile?

Dr. Castleman: I cannot answer that.

Dr. Suzman: It might be an effect directly on the bile formation.

Dr. Castleman: You mean that the durg may affect the bile itself and make it more viscid — analogous to the mucoviscidosis associated with pancreatic fibrosis.

Dr. Ellis: That is one of the theories. Many other theories have been proposed. They are being tested experimentally.

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Woman's AUXILIARY

REPORT

PROBLEMS caused by Arizona's geographical layout find their way into the work of the auxiliary membership chairman. Since her task is to obtain memberships at large from doctors' wives outside organized counties as well as promoting membership gains within the organized territories, personal contact is often impossible. As a result, the chairman's approach to the job is usually through a series of postal communications. In fact, one's ingenuity can be tested in the attempt to try a successful appeal for new memberships as well as renewals.

Probably the most effective approach is the basic truth that members at large *are* important to the state program. Given the opportunity to understand the need and purpose of joining, more wives are participating each year. With Arizona's medical population continuing to grow, auxiliary prospects increase as well, and each member can become an effective membership committee of one simply by spreading the word of auxiliary program whenever she meets a new doctor's wife. A brief review of the worthwhile Nurse's Loan Fund in itself should be enough to convince the membership prospect that her nominal financial aid alone serves a definite and immediate purpose.

Arizona is proud to welcome Coconino County to its list of organized auxiliaries. Organized in December, Coconino wives have already made progress in many phases of program participation.

Pinal County wives have been encouraged to organize on a social level with the hope of some program work being possible in spite of the disadvantages of distance within the county.

A definite purpose of public relations as well as just plain enjoyment can be achieved through getting acquainted over the bridge table or other informal gatherings, and the auxiliary condones organization without full program participation where conditions make it difficult. Many phases of the program can be accomplished by one or two persons even in small

communities, and the work that doctors' wives inevitably do in their areas can well be added to the state reports to indicate full service given by auxiliary members over the entire state.

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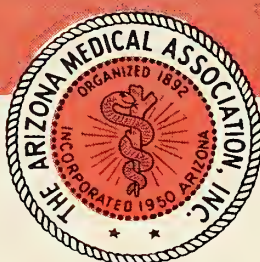
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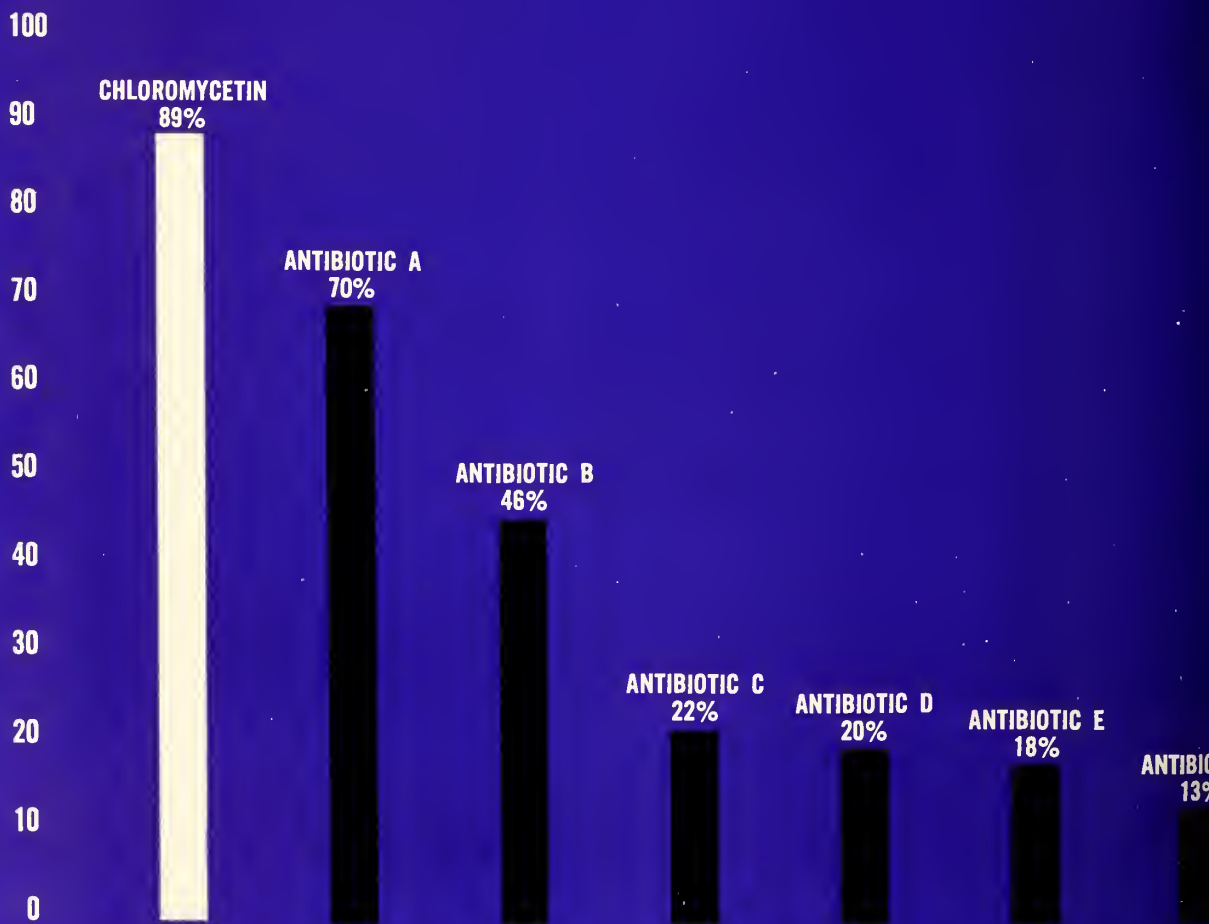
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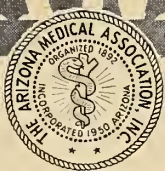
**SENSITIVITY OF 100 STRAINS
OF HEMOLYTIC STAPHYLOCOCCUS AUREUS
TO CHLOROMYCETIN
AND OTHER IMPORTANT ANTIBIOTIC AGENTS***



*This graph is adapted from Kempe.¹ The single bar designated as "Antibiotics F" represents three widely used, chemically related agents grouped together by the investigator in his study.

ARIZONA MEDICINE

Journal of
ARIZONA MEDICAL ASSOCIATION



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THE DIAGNOSIS OF ACUTE CHEST PAIN*

By Henry Brainerd, M.D.

San Francisco, California

ACUTE chest pain requires immediate, accurate diagnosis. Serious lesions must be recognized and treated appropriately to minimize danger to the patient's life. On the other hand, since patients are wont to believe that all chest pain is of cardiac origin, avoidance of producing cardiac neurosis by mistakenly diagnosing chest pain of less serious origin as due to the heart is almost equally important.

A painstaking history is of great value in the differential diagnosis of chest pain. The character, distribution, apparent inciting cause, and relation to respiration and position must always be elicited, as must a history of previous chest pain. Physical examination, even when carefully performed, at times may be negative. X-ray films, electrocardiograms and other laboratory procedures should be used in discriminating fashion. Even in urgent situations a systematic approach is desirable, although relief of severe pain and shock must at times take precedence.

By far the commonest pain of cardiovascular origin is that due to coronary artery disease. It is important to differentiate among angina pectoris, coronary insufficiency, and myocardial infarction. The character of the pain is similar in all three. It is usually described as squeezing, crushing, constricting, or burning. The pain is usually located beneath or just to the left of the sternum, but may radiate across the chest, to the neck, jaw, shoulders, one or both arms, or epigastrium. Characteristically, the pain of angina pectoris is the least severe and of the briefest duration. Persistence over 10 minutes should arouse suspicion of coronary insufficiency or myocardial infarction. Angina is typically precipitated by effort and occurs during activity rather than afterward. Almost invariably the patient will voluntarily cease the inciting activity until the pain subsides. Excitement, exposure to cold, disturbing dreams and heavy meals may also induce anginal distress. While nitroglycerin will usually relieve the pain of angina pectoris,

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so also will it occasionally be effective in pains of other origin. The electrocardiogram may be negative. Pain of similar character persisting more than a short time may be due to myocardial infarction or coronary insufficiency. A history of angina pectoris, often recently increased in frequency and severity, may frequently be obtained from patients suffering from myocardial infarction. If significant hypotension, pericardial friction rub, fever, leucocytosis, acceleration of the sedimentation rate, and elevation of serum oxalacetic transaminase or lactic dehydrogenase levels occur in association with serial changes of the electrocardiogram, myocardial infarction may be diagnosed. If following persistent anginoid pain unrelated to exertion, electrocardiographic alterations of brief duration are the only laboratory abnormality, coronary insufficiency without infarction may be assumed. Differentiation between myocardial infarction and coronary insufficiency may be difficult, because many of the confirmatory phenomena may be lacking in the former.

While simple aneurysm of the thoracic aorta may produce constant or recurring pain due to pressure on other structures, dissecting aneurysm usually produces acute, severe chest pain. Dissecting aneurysm is most likely to occur in hypertensive or pregnant persons. The pain is usually described as tearing or crushing and is located substernally, over the anterior chest or upper abdomen. Radiation, often progressive, to the back, neck, upper extremities and lower extremities, may occur. The simultaneous presence of chest pain and neurological symptoms and signs, especially unconsciousness, should arouse suspicion of this condition. Alterations in the pulse and blood pressure of one or more extremities may be observed. The sudden development of aortic insufficiency denotes retrograde dissection. Pulsation of the right supraclavicular joint may be observed. Chest x-ray may reveal alteration in the aortic shadow. While abnormalities of the electrocardiogram are commonly present, those typical of myocardial infarction are uncommon.

Pain resembling angina pectoris in character and inciting cause may occur in the presence of pulmonary hypertension due to such causes as mitral stenosis, interatrial septal defect, and pulmonary arteriolar sclerosis. Such an etiology of effort pain, relieved by rest, should be sus-

pected in the presence of lesions producing pulmonary hypertension. The pain is not usually relieved by nitroglycerin, but may be ameliorated by oxygen. The pain of massive pulmonary embolism, often associated with shock and dyspnea, is often mistaken for that of myocardial infarction. The true nature of the pain may be suspected if there is evidence of peripheral phlebothrombosis. Pulmonary embolism is most likely to occur in seriously ill patients after surgery, after myocardial infarction, and in the presence of congestive heart failure. The pulmonary second heart sound may be accentuated; the neck veins may become distended and the liver engorged. Later, or if the embolus is relatively small, pleural pain, hemoptysis, and slight icterus may occur. The electrocardiogram may reveal the pattern of right ventricular strain, although the abnormalities are usually transient. Secondary myocardial infarction or atrial fibrillation may occur to confuse the diagnostic picture. Chest x-rays are very often negative or inconclusive.

The pain of acute pericarditis is commonly mistaken for that of myocardial infarction. The pain is generally precordial or substernal in location, and often radiates to the back, neck, shoulder, upper arm or abdomen. The pain may be accentuated by respiration, swallowing or movement, and may be relieved by sitting upright. Fever and a pericardial friction rub are often present from the outset, in contrast to myocardial infarction where these manifestations are generally delayed. The electrocardiograph usually assists greatly in differentiation. X-ray of the chest is helpful only if pericardial effusion occurs, under which circumstances enlargement of the area of cardiac dullness, pulsus paradoxicus, and increased venous pressure may be observed.

The pain of pleurisy is rarely mistaken for that of any other origin. Accentuation by respiration, coughing, or movement is characteristic. It is important to recall that the pain of diaphragmatic pleurisy is referred to the neck and shoulder or upper abdomen. Splinting of the chest and pleural friction rub may not always be observed, but if present are diagnostic. The many possible causes of pleurisy must be considered.

Spontaneous pneumothorax may produce

severe chest pain and dyspnea. The pain is most commonly, but not invariably, pleuritic in type. Examination of the chest usually reveals deviation of the mediastinum, hyperresonance, and diminished breath sounds, but may be unrevealing. Chest x-ray is usually diagnostic.

Mediastinal emphysema may cause chest pain resembling that of myocardial infarction. Dyspnea and cyanosis may be present. Subcutaneous emphysema may be a late sign. The "cement-mixer" sound heard over the sternum or precordium is pathognomonic. X-rays of the chest, especially the lateral views, usually reveal air in the mediastinum.

Pleurodynia should be diagnosed with caution in the absence of an epidemic. Sudden severe pain in the chest or upper abdomen, worsened by movement or respiration, associated with fever may cause confusion with other conditions. The symptoms may abate in a few days, only to reappear after a short interval. Rarely, a pleural rub may be heard. The isolation of Coxsackie virus (type B) or the development of neutralizing antibodies against this virus may confirm the diagnosis.

While the pain of esophagitis, cancer of the esophagus, and cardiospasm is recurrent and often related to ingestion of food, hiatus hernia may occasionally produce acute, severe pain in the chest, left shoulder, and upper abdomen which mimics that of myocardial infarction. Abnormalities of the electrocardiogram are also occasionally observed. Relief may be obtained by change of position, especially sitting upright. It must be recalled that the mere demonstration by x-ray of a hiatus hernia does not certify that it is the source of symptoms, since many hiatus hernias are asymptomatic.

Acute mediastinitis is an uncommon cause of chest pain, often radiating to the back and shoulders. Signs of infection are present. X-ray may reveal a widening mediastinal shadow.

Pain due to radiculitis caused by lesions of the spine, most frequently osteoarthritis, commonly imitates other types of chest pain, and may be felt only anteriorly. Hyperesthesia of the involved area, best brought out by pinching the skin, is of great aid diagnostically. Alteration of the pain by change in position is very frequent. The pain is often worse during the night. X-rays of the spine may reveal the cause.

It must be remembered that the pain of herpes zoster may precede and succeed the characteristic eruption. Intercostal neuritis produces a similar type of pain.

Persistent chest pain commonly is observed following myocardial infarction, and is often ascribed to extension of the infarct or to pulmonary embolism. Radicular pain is frequent in these circumstances, but occasionally such pain may be due to inflammation of the muscles of the chest from unknown cause.⁽¹⁾ Local tenderness of the muscles is suggestive of this lesion.

Pain originating below the diaphragm may be located in the chest. Acute cholecystitis, pancreatitis, ruptured peptic ulcer, or distention of the splenic flexure of the colon with gas may produce symptoms principally referable to the chest, although their true origin is usually apparent after careful history, examination and appropriate laboratory studies.

Among the commonest causes of chest pain, more likely to be recurrent and mild than acute and severe, is neurocirculatory asthenia. The pain is usually precordial rather than substernal, and often is localized to a small area. It may be a prolonged dull ache or a sharp stabbing pain synchronous with the heart beat. While the pain may occur during exertion, it usually persists long afterward, and, in fact, commonly appears after exertion is over. Anxiety, hyperventilation, dizziness, and vasomotor instability are very frequent accompanying manifestations.

Erroneous diagnosis of such symptoms as of cardiac origin may doom the patient to a life of cardiac neurotic invalidism. Minor alterations of the T waves of the electrocardiogram may be observed in anxiety states and must not be mistaken for the changes due to coronary artery disease.

SUMMARY

Pain in the chest may arise from many causes of varying seriousness. It is of utmost importance that the correct diagnosis be made quickly by means of careful history-taking, discerning physical examination, and discriminating selection of appropriate laboratory procedures.

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THE CLINICAL USE OF QUINIDINE

By A. W. Gaudielle, M.D.

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QUINIDINE is a vital drug in the treatment of cardiac arrhythmias. Like many therapeutic agents that are effective in serious disease, it is also a dangerous drug if misused.

Most practitioners have to rely upon the conclusions of those who have had extensive clinical and experimental experience with quinidine. However, conclusions as to the clinical use of this important drug have often been controversial. This paper is an attempt to formulate what I feel to be a concise and logical program for the clinical use of quinidine. It is a compendium of the conclusions of many leading workers in the field.

CLINICAL PHARMACOLOGY

The reader is referred to an adequate text for the formalized pharmacology of quinidine. The following are the important clinical features that are essential for the effective use of this drug:

(1) *Method of Action:* There is no evidence, contrary to the widely prevalent conception, that the drug is a "protoplasmic poison" when used in therapeutic doses for the treatment of cardiac arrhythmias. Like many drugs, the effectiveness of quinidine has been determined empirically. Only recently have workers gained some insight into its basic mode of action in the tissues. It is sufficient to say that it may work by depressing oxidative metabolism, or it may interfere with processes requiring acetylcholine. The exact method of its action is not yet known.

(2) *Cardiac Effects:* More is known about the clinical effects of quinidine on the heart muscle. It has two basic actions: (a) indirect, and (b) direct.

(a) The indirect is a blocking action on the cardiac vagal system. By this "vagolytic" action, the effective refractory period is increased, and conduction is slowed in the auricle. Also, the sino-atrial node is thus partially relieved from vagal slowing effects, and with a normal sinus rhythm, the pulse rate may increase under therapy. Likewise, the atrioventricular node is partially relieved from vagal inhibition, and

conduction of impulses tends to increase through this junctional tissue. This accounts for the often seen increase in ventricular rate when an atrial arrhythmia such as atrial flutter or fibrillation is being treated with quinidine alone. Under treatment, before the arrhythmia is terminated, the degree of atrioventricular block may be decreased, and as the atrial rate is slowed by the direct action of the drug, the ventricles may respond to more impulses — in flutter, for example, in a 1:1 or 2:1 fashion from a previous higher block. The resultant ventricular tachycardia can be very dangerous to an already weakened heart.

It is to be recalled that digitalis has an opposite effect by causing vagal stimulation which diminishes conductivity or sets up a partial block in the atrioventricular node. Thus, it will interfere with the production of rapid ventricular responses. This is a major argument in favor of previously digitalizing patients who are to be treated with quinidine for atrial fibrillation or flutter. However, overdigitalization is to be scrupulously avoided, since this may cause atrioventricular block — and as explained below, increase the possibility of ventricular standstill or fibrillation being caused by quinidine.

The indirect vagal inhibiting effect on the heart does not extend into the ventricles, since few or no vagal fibers reach below the atrioventricular node.

(b) The direct action of quinidine on atrial and ventricular myocardial tissue also increases the refractory period, slows conduction, and decreases myocardial irritability. It appears to have a strong, quite selective action on ectopic and tachysystolic areas throughout the heart, in suppressing the firing of abnormal stimuli. Clinically, this is the most important effect. It is also effective in abolishing the Wolff-Parkinson-White syndrome by delaying conduction through the bundle of Kent. (However, in this syndrome treatment is not required unless paroxysmal tachycardia supervenes.) Many myocardial manifestations may occur during therapy. Prolonga-

tion of the Q-T interval, and slight RS-T abnormalities, an exaggerated U-wave which fuses with the preceding T-wave are among the earliest changes seen in the electrocardiograph.

Widening of the QRS due to diminished speed of electric impulse conduction is an important electrocardiographic effect. This is usually due to the production of a bundle-branch block, or delay of stimulation of the free ventricular walls at Purkinje's network.

Various degrees of atrioventricular block may be produced. The drug may cause serious ventricular arrhythmias, and due to suppression of normal and idio-ventricular pacemakers, cardiac standstill.

Some of these myocardial changes may be expected at a safe therapeutic level, and some are serious toxic manifestations that demand immediate cessation of therapy. They are discussed in further detail below.

(3) *Systemic Effects:* Cinchonism may occur with tinnitus, temporary decrease in hearing, giddiness and weakness. This is usually mild and thus not serious, and if the disorder warrants further therapy, it is not a contraindication to stop medication.

It may cause a feeling of generalized warmth, excessive sweating, nausea and vomiting. On smaller doses, the gastrointestinal symptoms may be controlled by taking the drug with food, or changing to intramuscular administrations. On larger doses and higher plasma levels, these symptoms are due to central nervous system action, and will persist regardless of the method of administration. These side effects normally are not serious, and do not constitute an absolute contraindication to further treatment.

In instances of severe toxicity, generalized convulsions may occur. This is very rare.

Another very rare complication is severe respiratory depression. This is due to central action, and may occur on small doses as an idiosyncrasy, long before significant myocardial effect has occurred. If such is the case, artificial respiration, a free airway, and oxygen are then vital until enough of the drug is metabolized.

The drug has a "spasmodic" action on smooth muscle and causes peripheral vasodilation and hypotension. This is usually mild and incon-

sequential on therapeutic doses given by mouth or intramuscularly. It is most marked when the drug is given intravenously, and serious collapse can occur. The hypotensive effect seen on I. V. administration is more directly related to the speed of injection rather than the therapeutic plasma level of the drug. Therefore, it should be given very slowly intravenously, and (by any route) adequately frequent blood pressure determinations should be made concurrently. The intravenous route should be used only for emergency situations. If serious hypotension should occur, norepinephrine given intravenously is indicated.

Drug fever has been reported, usually occurring a few days after beginning treatment, or after resuming therapy following a short period of rest.

Other systemic effects of an allergic nature have been reported. Thrombocytopenia with purpura is always mentioned, although it is extremely rare. This can occur at any time while the drug is being administered — on small or large doses. It is theorized in this situation that quinidine acts as a haptene, and thus induces a state of sensitivity. Antibodies are then formed, and the shock tissue is the platelets, which apparently undergo lysis in a very short period of time. This causes the sudden appearance of purpura; the tourniquet test becomes positive; and clot retraction is inhibited.

Agranulocytosis, neutropenia and aplastic anemia have also been reported, but also are very rare.

Urticaria and a variety of allergic skin lesions may occur, likewise rarely, and on any dose.

(4) *Synergistic Action of Other Drugs:* There are many drugs that fall into this classification. The more commonly used preparations are:

Procaine Amide (Pronestyl): This drug has amazingly similar pharmacological properties in all important respects. In some urgent situations, if the use of quinidine fails, Pronestyl will have to be tried with exactly the same precautions and checks. They should not be used together, at the same time.

Demerol: Can markedly potentiate the action of quinidine, and dangerously so, especially if given intravenously. If narcotics or sedatives are required, I prefer the use of morphine or barbiturates during quinidine therapy.

Papaverine: Has many properties in common with quinidine.

Atropine, *Banthine* and related drugs are synergistic in respect to their vagal inhibiting effect.

Atabrine: Reported to be effective in the treatment of certain cardiac arrhythmias.

Drugs of the antihistamine group: quinidine has some antihistamine activity.

The first four categories are the most important. I prefer not to use them concurrently with quinidine, especially when they are used intravenously.

(5) *Absorption, Route of Administration, Metabolism and Excretion*: (a) Oral (Tablets 0.2 gm. — 3 grains): This is the choice route of administration. Absorption from the upper intestinal tract is rapid and complete. With recent improved fluorometric methods of determining plasma levels, it has been shown that after a single oral dose, peak plasma levels occur in about two hours, are maintained until four hours after administration, then decline rapidly. The tissue concentrations are much higher than the plasma level, but are roughly parallel to it.

Only 1 to 3 per cent of a given dose is recovered in the stools, and about 20 per cent is excreted in the urine. The remainder is metabolized rapidly in the body, presumably by the liver. However, in clinical situations, chronic hepatic and renal disorders are not a contraindication to the use of quinidine if the drug is necessary, since plasma levels in hepatic or renal insufficiency are not abnormally high.

It might be mentioned that in congestive heart failure, quinidine disappears from the blood more slowly, but the levels are the same.

The myocardial effect of quinidine in general parallels the plasma level. Plasma level determinations have shown that there is a homeostatic metabolic mechanism in the body that limits the level on various dosage schedules:

On a set dose given every two hours, the level climbs in a step-wise fashion, but with lessening peaks two hours after each dose for five doses. If the same dose is continued beyond this number, a plateau occurs — metabolic breakdown paralleling the intake, and no further increase occurring as long as the same doses are given. To increase the plasma level after the fifth or sixth dose is given, one must either increase the

dose, or give the drug at more frequent intervals, or give the drug in a "broken" schedule. By this last-mentioned schedule, after the last (fifth) dose is given, the plasma levels decrease rapidly, about a 40 per cent residual level of the previous peak level remaining 12 to 18 hours after the last dose; and a level near zero after 24 hours. If the same dose is resumed on a schedule every two hours after 12 to 18 hours' rest, a further increment will occur with a higher peak level after the fifth dosage, due to the residual level previously present. Apparently by giving the drug in this "broken" schedule, the homeostatic mechanism is upset, and progressively higher peak levels can be obtained.

When a set dose of the drug is given every 4 to 6 hours around-the-clock, the same mechanism occurs, but the plasma peak level is not reached until 2 to 5 days. After this period there will be no further increase in plasma levels, unless the dose is increased, or the drug is given more frequently.

These considerations become important when outlining a course of therapy. For example, to prevent premature contractions, the drug is given four times per day; if there is no therapeutic effect after five days, there is little likelihood of success unless the dosage is increased.

(b) Intramuscularly (Quinidine gluconate solution or quinidine gluconate 0.8 gm./10 cc. propylene glycol): After a single or repeated doses, essentially the same plasma levels are obtained as with the oral administration, the peak occurring earlier, in about one hour — but the decline being the same. Clinically, the doses are the same, and interchangeable with the oral route. The drug can be given intramuscularly in more urgent situations, or when the patient cannot take it by mouth.

(c) Intravenously (Quinidine gluconate solution): (or quinidine lactate) This method is recommended for use only in emergency situations. It should be given slowly, with very frequent blood pressure and electrocardiographic checks. Severe hypotension and peripheral vascular collapse may follow, and norepinephrine should be available. The peak level occurs in a few minutes, and falls rapidly after 5 to 10 minutes.

In the very occasional case, an arrhythmia may be resistant to large doses given by mouth, but respond to rather small doses intravenously.

Given by this route, it is hazardous at best; but it is safest given as a slow drip: one ampule in 50 to 150 cc. of 5 per cent glucose, and allowed to drip slowly, preferably at the rate of 1 cc. per minute; 2 cc. per minute in very urgent situations.

Constant auscultation and electrocardiographic checks (Lead II and/or V-1 usually suffice), and very frequent blood pressure determinations should be made. In this way one can stop the administration when the desired effect is seen, and there is less danger of sudden, alarming side-effects.

There are some who feel this method is actually less hazardous than intramuscular injections, given in the usual manner.

(6) *Plasma Levels, Electrocardiographic Changes, and Toxicity:* Since quinidine plasma levels are not universally available, it is useful to remember significant clinical symptoms and cardiographic changes that correlate fairly well with the plasma level.

Signs of severe toxicity usually do not occur until a plasma level of 7 to 10 milligrams per liter is reached.

Recent studies suggest that arrhythmias stop only at or above certain plasma concentrations. One reliable extensive study shows that auricular fibrillation converts at 5 to 7 milligrams/liter.

It is helpful to keep in mind clinical reflections of the various plasma levels:

Idiosyncrasies and allergic manifestations can occur at any plasma level. Therefore, it is wise to give a test dose of 0.1 gm., and wait one hour, if the situation is not urgent. If the situation is urgent, therapy can be started immediately — the first dose serving as a test dose.

Gastrointestinal symptoms are uncommon below a plasma level of 4 to 6 gm./liter, but may occur at this level. Usually, they are not a serious indication to stop therapy, unless intolerable to the patient, or are severe. Very occasionally severe vomiting or diarrhea after the first dose or few doses will preclude further treatment.

Hypotension of a mild degree, that is, a 10 to 20 mm. fall, is not uncommon on oral medication. Marked fall in the blood pressure usually occurs on high doses only, or on intravenous administration.

Electrocardiographic changes reflect the most useful and dangerous physiological effects of the drug. A full tracing is essential before therapy is started, for diagnostic purposes, and for later comparative use. After this, Lead II and/or V-1 is usually adequate in following the course of treatment. During intravenous administration, the lead wires are left attached and frequent short tracings will usually suffice.

Increase in the Q-T interval and slight RS-T abnormalities are the usual earliest changes. These may occur at relatively low plasma levels, and are not important signs of toxicity. Widening of the QRS is important, and in general a level of 7 mg./liter is approached before widening is marked. Occasionally there is no widening, even at high levels. An increase of the QRS by 25 per cent is considered within normal expectations. Above this it is an indication for considerable caution, especially as a 50 per cent increase is approached. A QRS increase of 50 per cent or above is an indication to stop therapy, and if necessary to try other forms of therapy.

Ventricular arrhythmias are considered a serious toxic change *on any dosage or schedule*, and any plasma level. Occasional premature ventricular contractions are not too important, and may be due to the underlying heart disease. Frequent premature ventricular contractions, short runs of premature ventricular contractions, or ventricular tachycardia are an indication to stop therapy or reduce the dosage. Premature ventricular contractions occurring *on the terminal downward limb* of the preceding T-wave are especially ominous, and suggest that ventricular fibrillation or asystole may be imminent.

On the following dosage schedules plasma levels may be anticipated:

(a) Oral or I. M.: Quinidine 0.4 gm. every 6 to 8 hours around-the-clock will give a peak in 3 to 5 days of about 3 to 5 mg./liter. Toxic effects are unlikely at this level. This is a commonly used dosage schedule in the treatment of minor arrhythmias; that is, premature atrial, nodal and ventricular contractions. It is also a useful schedule for maintenance therapy after an arrhythmia is treated; in this situation, a lower level is sufficient for prophylaxis.

Quinidine 0.2 gm. every two hours for five doses will give a peak level of about 3 mg./liter two hours after the last dose, and a residual of

1.8 mg./liter 12 to 18 hours after the last dose.

After 12 to 18 hours, quinidine 0.4 gm. given in this same way will give a peak of 6 mg./liter, and a residual of about 2.5 mg. A dose of 0.6 gm. given in this fashion gives a peak of 8 to 9 mg. with a residual of about 3.9 mg. The peak level on this schedule is a very effective one, but approaches the level of toxicity.

(7) *Contraindications:* Lesser degrees of atrioventricular block and incomplete bundle branch block are relative contraindications, but very careful checks are in order. Quinidine is not used in the presence of complete atrioventricular block. In this circumstance, even a single small dose can cause serious electrocardiographic changes, serious premature ventricular contractions, prolonged ventricular standstill, and runs of ventricular fibrillation with intermittent periods of ventricular asystole. (Essentially the same holds true for Pronestyl). The drug is also contraindicated in overdigitalization, subacute bacterial endocarditis, and complete bundle branch block. There is one exception, however: very occasionally atrial tachycardia may occur with a bundle branch block being present. Under the circumstances it may be impossible to determine electrocardiographically whether one is dealing with an atrial tachycardia plus a bundle branch block, or a ventricular tachycardia. It is generally felt that quinidine is the safer drug to use in this instance, rather than digitalis.

The drug is not used to treat sinus tachycardia.

Quinidine is probably contraindicated in large doses during pregnancy.

USES IN ARRHYTHMIAS

Quinidine in the Treatment of Specific Arrhythmias: Generally in the treatment of cardiac arrhythmias, emergency measures are rarely needed if the case is seen early. An exception occurs in ventricular tachycardia, in which instance there is usually serious underlying heart disease, and rapid control of the ventricular rate of the arrhythmia is indicated.

Quinidine should be used only when the diagnosis is certain. This invariably requires electrocardiographic confirmation.

(1) *Premature contractions:* Premature atrial, nodal or ventricular contractions usually do not require specific therapy. If the arrhythmia is excessively disturbing to the patient, and the

underlying cause cannot be found or cannot be eliminated, quinidine can be tried. One can start with a small dose, as 0.2 gm. every 8 hours, three times per day; and increase the dosage to 0.4 gm. every 6 to 8 hours after 3 to 5 days if there is no effect from the lower dosage. If the arrhythmia occurs or tends to be bothersome only at a certain time of the day, or under a known emotional or other circumstance, a single similar small dose about two hours before the usual onset will often suffice. Premature ventricular contractions are common in congestive heart failure, and in this instance control of the failure by the usual means is usually effective. Premature ventricular contractions occurring persistently during a fresh myocardial infarction may herald the onset of a serious ventricular arrhythmia, and should be treated with quinidine. Quinidine 0.2 gm. every 6 hours can first be used. If this does not rapidly control the arrhythmia, the dose should be increased to 0.4 gm. every 6 hours around-the-clock. The drug should not be given prophylactically during infarction if premature contractions do not occur.

Sedation is a helpful adjunct in controlling premature contractions, and may aid in decreasing the total amount of quinidine required.

Often the episodes of premature contractions will be absent for long periods, and recur frequently at other times. Once the episodes are well controlled, the drug is eliminated for longer or shorter periods of time, and resumed as needed.

(2) *Paroxysmal supraventricular tachycardia:* As a general rule, the seriousness of hemodynamic defect of any paroxysmal or permanent arrhythmia is reflected in the degree of increase of the ventricular rate above normal. Often the immediate desirable effect is not to dramatically convert the arrhythmia, but to first control the ventricular rate.

Paroxysmal atrial tachycardia is often benign, especially in the young or middle-aged with a normal heart. The usual methods of mechanical vagal stimulation are first adequately tried. If this is unsuccessful, a rapid-acting barbiturate to put the patient to sleep is often successful. Quinidine in a single 0.4 gm. (6 grains) dose with the usual soporific dose of a barbiturate will convert a high percentage in 2 to 3 hours. This can easily be self-administered, and is advantageous in those with recurring episodes. If

episodes recur very frequently, maintenance therapy with quinidine is indicated as described under "Atrial Fibrillation."

Many clinicians prefer the use of a rapid-acting digitalis preparation I. V. or I. M. (such as ouabain). This therapy is best used in the elderly patient; or when the above fails; or if the rate is very rapid so as to cause angina, congestive heart failure, or shock. (If given I. V., it should be given slowly with due respect to the potency of the drug.) Shock thus occurring should be concomitantly treated with norepinephrine. Vagal stimulation (such as carotid massage) may be successful following such therapy, if the digitalis alone is not shortly effective.

In those in whom attacks occur very frequently, especially in the elderly, and in whom digitalis therapy is successful, digitalization and maintenance on daily rations of digitalis is of great value.

If digitalis or a single quinidine dose is not successful, larger doses of quinidine are tried, i.e., 0.4 gm. is given every 2 hours up to five doses. A short ECG tracing of Lead II and/or VI is taken before each dose, and the blood pressure is recorded. In the rare case, a second similar course may be needed using 0.6 gm. each dose, with the realization that toxicity may be manifest.

In the elderly patient with a very fast rate, some feel the emergency to be acute enough to warrant giving digitalis and quinidine simultaneously intramuscularly.

In the infant, paroxysmal atrial tachycardia is serious, and I. V. digitalis is the treatment of choice in these cases when critical. I might add that quinidine has been used in various arrhythmias in infants and children, and may be calculated on the basis of 3 mg./pound body-weight, orally or I. M. every two hours, as in the adult case.

Some cardiologists feel that paroxysmal nodal tachycardia is relatively resistant to digitalis therapy. These maintain that quinidine is much more effective in this instance. The majority feel that supraventricular tachycardias, atrial and nodal, can be treated in the same way.

As a final caution, I would mention that digitalis toxicity can cause atrial tachycardia with atrioventricular block of various degree (often 2:1). Here the atrial rate usually increases slowly

with block developing as the rate increases. In this case, quinidine is contraindicated, and potassium is the drug of choice.

(3) *Paroxysmal ventricular tachycardia*: This is usually seen in the diseased heart, and is so often fatal as to require immediate specific therapy. Supportive treatment is essential if the patient is in failure, or shock: that is, oxygen, or vasopressor agents — as the case may be.

Many cardiologists prefer intravenous or intramuscular procaine amide if the situation is urgent. There is no real evidence that it is absolutely more effective than quinidine.

It is to be remembered that a "kill-or-cure" attitude is not justified in the use of quinidine.

If quinidine is decided upon, and the situation is not very urgent, the oral (preferred) or I. M. route is used. It can be given as follows:

1.0.2 gram for the first dose (test); 0.4 gram in *one* hour; 0.6 gram *four* hours later; 0.8 gram *four* hours afterward, etc., increasing each successive dose by 0.2 gram until the arrhythmia is converted, or a single dose of 2.0 gram is reached. Larger single doses have been used, but toxic reactions are much more likely. A short ECG tracing, blood pressure, etc., is recorded *before* each dose is given, and therapy is stopped at any point if serious toxicity occurs. or 2. 0.4 gram every *two* hours for a total of six doses with ECG and the usual checks before each dose. An alternate of this method which will give a slightly higher plasma level is: 0.4 gram every *two* hours for three doses with the usual precautions, followed by 0.6 gram every *two* hours for three more doses. Occasionally, a course of 0.6 gram every *two* hours is given from the start if the case is more serious.

On either plan, therapy is discontinued at any point when conversion occurs. Maintenance therapy should then be continued.

Parenteral quinidine is preferably given I.M., and is usually adequate even when failure is appearing.

If these fail, procaine amide can be tried with exactly the same precautions.

Intravenous quinidine has been used successfully, but is recommended only in the most urgent situations. It should be given by a slow I.V. drip, as described above.

It is to be remembered that during quinidine

therapy in this arrhythmia, the ventricular rate must be watched closely. As treatment progresses, the ventricular rate may slowly diminish. Conversion tends to occur at rates below 140. Very occasionally, rates of 120 to 110, or even 60 to 70/minute, will be seen without evidence of auricular activity. This signifies that the normal pacemaker has been suppressed by the tachycardia or the drug. If such is the case, further administration at similar or increasing doses may depress the ectopic pacemaker progressively and leave the heart with no pacemaker at all. In such an instance, reduction of the dosage or lengthening of the time between doses is indicated, and the drug continued to maintain a relatively slow ventricular rate, at about 90 to 100. This will keep the patient out of danger, and frequently at the lower ventricular rate, and with supportive therapy as indicated, the normal pacemaker activity will be resumed and conversion occur.

Fortunately, such a situation is rare, since the action of quinidine is usually selective on the ectopic pacemaker, and the normal pacemaker takes over quite suddenly.

After conversion, maintenance therapy is indicated.

Since the arrhythmia is a serious one, when the probability of an attack is evident (that is, frequent premature ventricular contractions, or short runs of ventricular tachycardia), prophylactic therapy should be started.

(4) *Atrial (auricular) Flutter*: Quinidine can be used first in this instance, only with acute onset, if the heart appears not to be seriously diseased, and failure is not present — and preferably in the young or middle-aged. The attack can be treated as the paroxysmal tachycardias. If during therapy the ventricular rate increases suddenly and endangers the patient, rapid digitalization is indicated. If the paroxysmal attack is easily converted but tends to recur, maintenance therapy is used.

If the flutter is chronic, failure occurs, or the initial ventricular rate is high; if angina or shock is present, or if the patient is elderly, digitalis is the drug of choice. This will control the ventricular rate (occasionally a normal sinus rhythm will occur), and can thus be maintained. Often on digitalis, atrial fibrillation will ensue and conversion by quinidine may be considered

as below.

(5) *Atrial (auricular) fibrillation*: Since World War II, there has been much renewed interest in the conversion of this arrhythmia to a normal sinus rhythm. There is still wide divergence of opinion as to the advisability of converting those with long established fibrillation.

Conversion is not considered in the elderly patient with a severely diseased heart; in the patient with a greatly enlarged heart; severe mitral stenosis with a greatly enlarged left auricle; auricular fibrillation which has relieved angina pectoris; thyrotoxicosis; conduction defects as above-mentioned; congestive heart failure; and over-digitalization.

The chief advantages of conversion of auricular fibrillation are:

(a) A demonstrated increase of cardiac output of 20 to 40 per cent after conversion in the heart which has compensated maximally while fibrillating. This is usually attended by clinical improvement, increased exercise tolerance, etc.

(b) The decreased risk of sudden death placed at 2.5 to 4.0 per cent or higher, while fibrillating.

The much stated risk of sudden embolization at the time of conversion has probably been over-emphasized with present-day selection of patients, and careful use of the drug.

There is increasing prevailing opinion in favor of conversion when the fibrillation is of recent onset, especially if there is no evidence of cardiac disease.

Use of the drug is also being favored in acute or established fibrillation regardless of duration, if there is no significant heart impairment; and if no other contraindication as mentioned previously exists.

A third situation which favors consideration for conversion are those patients who have repeated emboli. In this instance, the death rate from sudden embolization is very high, or permanent disability — for example, hemiplegia — is common. Conversion will tend to prevent further thrombus formation and subsequent embolization. The risk of embolization at the time of conversion is 1 per cent or less.

Conversion is also attempted in the patient with adequately treated and controlled thyrotoxi-

cosis in whom auricular fibrillation persists.

Another indication for conversion is postcommisurotomy fibrillation. Frequently, in the first 7 to 10 days postoperative period of mitral commissurotomy, atrial fibrillation will occur. Many will revert to normal, spontaneously. Therefore, in this situation conversion would preferably not be attempted until 10 to 14 days postoperatively.

Very rarely a situation may occur in which the acute onset of fibrillation, or for that matter flutter, may cause shock. Rapid digitalization is then indicated; but in the very occasional case, the ventricular rate may not be controlled. The situation is then urgent and conversion should be attempted.

Rarely, atrial fibrillation may not be controllable by digitalis if the bundle of Kent or Wolff-Parkinson-White's syndrome is operating. Quinidine may be used to advantage in this problem.

A rare patient may be so disabled by the palpitation alone produced by the fibrillation, though otherwise adequately controlled, that conversion may be attempted.

One last indication for attempt at conversion is the rare patient with intractable failure due to severe heart damage, in whom *maximum* treatment has failed to further benefit the condition. Here it may be attempted to prolong life and promote comfort, but with considerable risk. The percentage of conversions in these instances is low, and it is difficult to maintain a sinus rhythm.

Successful conversion in a large group of selected patients might be expected to run 80 to 85 per cent. In mitral stenosis, the percentage runs around 50 per cent, and these cases are more difficult to maintain in sinus rhythm.

There is still controversy over whether digitalis and quinidine should be used simultaneously, at all. In the occasional young patient especially with acute or paroxysmal fibrillation, with a sound heart, conversion may be attempted without prior digitalization. In the majority, I feel careful digitalization is indicated to control the ventricular rate before quinidine is used. The person is continued on daily ration maintenance digitalis during quinidine therapy.

All other means to obtain adequate compen-

sation are also used prior to quinidine therapy and continued as indicated. The patient should be afebrile, and any other serious illness evaluated. Freedom from apprehension is very important, and moderate barbiturate sedation is very helpful. All conversions should be attempted only in bed in the hospital, and with check-ECG readily available.

Method: A test dose is given the evening before. The following morning, a full ECG tracing is obtained, and blood pressure, apical rate and pulse rate are recorded. The first dose is given conveniently at about 8 a.m., and the same dose is repeated every two hours for a total of five doses, the last at 4 p.m. The blood pressure, apical rate, and pulse rate are recorded before each dose. If at any time during the therapy the rhythm becomes regular, or any remarkable change occurs, the ECG tracing is made immediately (Lead II and/or V-1 usually suffice). A moderate dose of a sleeping preparation can be given at bedtime. The following morning, and each morning of therapy, an ECG (Lead II and/or V-1) is done and evaluated for evidence of toxicity, rhythm, etc., *before* the therapy is again resumed in the same fashion, with the same observations before each dose as mentioned above. This is repeated each day as the therapy is continued.

Dosage: In elderly patients, or in those whom it is thought conversion may occur easily, 0.2 gm. of quinidine is administered every two hours, but is not likely to be effective. This may be repeated on the second day with a resulting higher blood level. If conversion has not yet occurred, 0.4 gm. is given every two hours the following day, and repeated on the fourth day. By this time, one will be reaching the level at which conversion will usually occur. If conversion has still not occurred, and there are no signs of severe toxicity, 0.6 gm. can be given on the fifth day. On the 0.4 gm. schedule, many will convert. On the 0.6 gm. schedule, the majority who are able to do so will convert (estimate 80 to 90 per cent, in one large series).

If there is still no conversion, the 0.6 gm. dose is repeated each day in the same fashion for a total of three days. After this period of treatment, if conversion has not occurred, there is little likelihood of success. However, if there is no evidence of serious toxicity, prolonged QRS, premature ventricular contractions, severe

nausea, vomiting, diarrhea, hypotension, etc., and if conversion is urgently required, 0.8 gm. every two hours can be tried, but must be used with considerable caution. If plasma levels are available, and are still low owing to poor absorption, intramuscular administration or larger oral doses may be used. On these doses, it is wise to get a short ECG tracing preceding each dose. Individual dosages as high as 1.0 gm. and 1.2 gm. have been used in exceptional circumstances, and usually with plasma level determinations.

Some prefer to increase the dosage to 0.4 gm. on the second day and third day; or to start with 0.4 gm. every two hours on the first and second day, and increase to 0.6 gm. on the third day. This will give a higher plasma level quicker. Again, conversion will usually occur on the 0.6 gm. dosage.

A useful electrocardiographic guide during therapy is the often-seen gradual, progressive decrease in the atrial rate, with the appearance of what appear to be atrial flutter waves. It has been noticed that often conversion is nearly achieved when the atrial rate falls to 250 or lower, and continued treatment is usually successful. If conversion has not occurred before the atrial rate of 150 is reached, evidence of serious toxicity as described above is usually seen and quinidine is stopped. Occasionally, such a patient may convert during the night if a moderate dose of barbiturate is given at bedtime.

If for any reason the course of therapy is stopped and another attempt is considered, the drug should be stopped for the intervening day to allow the plasma level to fall to zero.

After conversion, maintenance therapy is started six hours after the last effective dose of the therapeutic regime, or slightly later if the P-R is prolonged directly after conversion. Those converted after acute fibrillation with no evidence of heart disease are maintained for four weeks, then gradually reduced over two weeks, and finally omitted. Conversion after chronic fibrillation or with significant heart disease must be maintained indefinitely. Those who require small doses to convert can be maintained on 0.2 gm. every six hours around-the-clock. A schedule of 0.4 every eight hours — or every six hours — is a more desirable dose and will maintain the majority.

If for any reason fibrillation recurs, recon-

version may again be attempted, and most will reconvert on the same dosage that was successful previously. Slightly larger maintenance doses may then be indicated.

In conclusion, it is apropos to mention the treatment of serious quinidine reaction.

There is no specific antidote to quinidine, a fact which dictates careful control of dosage, and checks.

If the unfortunate situation does appear, treatment is aimed primarily at tiding the patient over until the metabolic breakdown of the drug has occurred.

If sudden depression of the heart occurs, it is usually due to cardiac arrest, or ventricular fibrillation.

Cardiac massage is the best emergency treatment for cardiac arrest, but usually such accidents occur where and when there are no facilities for adequate, immediate treatment. In this case, intracardiac epinephrine has been suggested as the only possible treatment in most cases. Cardiac arrest and ventricular fibrillation are impossible to differentiate with the stethoscope, and epinephrine would be contraindicated in fibrillation. But one must make the proverbial best of a bad situation, and if massage or electrical defibrillation is not immediately available, the chances are thus a little better to treat with epinephrine.

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SURVEY OF HUMAN ALLERGY TO NORTH AMERICAN SNAKE VENOMS

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MANY animal proteins are known which produce allergy in humans. Horse serum used in manufacturing biologicals may produce serum sickness and anaphylaxis in man. Deaths have resulted from allergy produced by the bites of ants and spiders, and the stings of bees, wasps, and yellow jackets.(1) Some authors have suggested that occasional deaths from snake venom poisoning are due to allergy, but a search of available literature reveals only four cases in which allergy to the venom of North American snakes have been confirmed. Zozaya and Stadelman,(2) using scratch tests, demonstrated allergy to snake venom in a male who had been injected with several kinds of venom for experimental purposes and later developed coryza and sneezing when working around dried snake venom. Lounsberry(3) reported a patient who developed anaphylaxis and a generalized dermatitis when bitten by a rattlesnake. He attributed this allergy to a previous snakebite which had rendered the patient hypersensitive to the venom. Recently Parrish et al.,(4) reported two additional cases of hypersensitivity to North American pit viper venom which were confirmed by scratch tests.

Since snake venom is a complex organic substance comprised chiefly of proteins, there is the possibility of developing hypersensitivity to it. The purpose of this study was to determine how frequently venom allergy develops in persons who have been previously bitten one or more times by pit vipers.

MATERIALS AND METHODS

The 30 patients, with a history of previous poisonous snakebite, who were tested in this study, live in Florida. The majority, 16, of them are professional herpetologists, reptile exhibit

lecturers, or amateur snake collectors. The remaining patients have various occupations and were traced from hospital records. The poisonous snake responsible for the envenomation in 25 patients was definitely identified; the remaining five patients had clear-cut signs and symptoms of pit viper envenomation, although the offending reptile was not identified. With the exception of one Negro, all of the patients were white. There were 28 male and two female patients. Each patient was carefully interviewed by the author to elicit a history of envenomation. Hospital records were used in most instances to confirm the history and physical findings. Several other patients were interviewed who gave a history of poisonous snakebite without accompanying symptoms of envenomation: they were not included in this survey. Is it possible for a poisonous snake to bite a person without injecting enough venom to produce clinical symptoms. Only patients with confirmed North American pit viper venom poisoning were studied. Thirteen of the patients had experienced two or more episodes of envenomation and 17 patients had only one previous envenomation.

Scratch tests, using fresh undiluted cottonmouth moccasin (*Agkistrodon piscivorus*) and Eastern diamondback rattlesnake (*Crotalus adamanteus*) venoms, were performed on all the patients. In my experience, scratch tests are more reliable than patch tests for detecting hypersensitivity to snake venoms. Intracutaneous tests were not employed, since snake venoms contain many pathogenic bacteria — especially, enteric and gram negative organisms.(5) It seemed unwise to expose these patients to the possibility of an infection by using intracutaneous injections of venom. Fresh, undiluted venoms, instead of diluted solutions of crystalline venom, were employed, since fresh venom would more closely simulate actual envenoma-

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tion in nature. *Crotalus adamanteus* and *Agkistrodon piscivorus* venoms were selected because they are representative of pit viper venoms. The venoms were obtained from Ross Allen's Reptile Institute, Silver Springs, Fla.

The technique used for the scratch tests was to clean the inner aspect of both the patient's forearms with an alcohol sponge, and make superficial 4-6 mm. long scratches with a Number 11 Bard-Parker scalpel blade. Cottonmouth moccasin venom was applied to one forearm and rattlesnake venom was applied to the opposite forearm by dipping a toothpick in the venom and painting the scratch lengthwise. Less than a drop of venom was used on each scratch. The tests were read 20 minutes later. Twenty normal adult subjects with no previous history of snakebite or exposure to venom were also scratch tested to serve as a control group.

If a patient demonstrated a positive reaction to the scratch tests, additional positive evidence of allergy was obtained by means of a modified Praustniz-Kustner test of local passive transfer of hypersensitivity. A modification of the technique described by Kolmer et al.,⁽⁶⁾ was used. Briefly, 0.1 cc. of the patient's serum was injected intradermally into the forearm of a control subject, and 24 hours later scratch tests were performed over the injected area.

RESULTS

Scratch tests were performed on 50 persons — 30 with a history of one or more previous pit viper envenomations, and 20 normal patients with no history of exposure to venom. No serious complications or ill effects were noted as a result of these tests. The wounds all healed in a normal fashion with no evidence of infection.

None of the control subjects exhibited signs of hypersensitivity; however, the venoms did produce a certain amount of irritation. There was a wide variation in the individual responses to the venoms. The response most often observed was a small wheal (without the presence of pseudopods) measuring about 7 x 10 mm. surrounding the scratch. This wheal, in turn, was usually surrounded by an area of erythema measuring approximately 10 x 13 mm. (See Fig. 1-A for the usual response in the control subjects.) The 20 control subjects reacted in one of four ways: (1) seven had a wheal with a large

surrounding area of erythema produced by moccasin venom, but only a wheal produced by rattlesnake venom; (2) six had a wheal and a large surrounding area of erythema produced by both venoms; (3) six had only a wheal with little or no surrounding erythema produced by both venoms; and (4) one had a wheal with a large area of surrounding erythema produced by rattlesnake venom, but only a wheal produced by moccasin venom.

With the exception of seven patients who demonstrated allergy to venom, the response of the patients with previous envenomations were similar to those of the control subjects. (See Table I for a comparison of the results of the scratch tests in the control subjects with those of the snakebitten patients.) These different types of response to venom cannot be attributed to inconsistency in technique, since the author carefully performed all of the scratch tests himself.

Three patients with one previous envenomation and four patients with two or more envenomations showed signs of hypersensitivity to pit viper venom. Of the hypersensitive patients with multiple envenomations, one had 12 poisonous snakebites, one had six bites, one had four bites, and one had two bites. In general, the scratch tests of allergic patients showed *larger wheals with pseudopods and more extensive surrounding erythema* than those of the control subjects and non-allergic patients with a history of envenomation. The presence of a wheal with pseudopods was the criterion for diagnosing allergy.

Each patient with a positive scratch test was also given a modified Praustniz-Kustner test of local passive transfer of hypersensitivity. All of the Praustniz-Kustner tests were positive. The areas on the forearms of the control subjects which were injected with 0.1 cc. of serum from the allergic patients and tested 24 hours later exhibited large wheals with pseudopods and extensive surrounding erythema. These reactions were entirely different from the control venom responses on their opposite forearms. The responses to venom after the serum injections were almost identical to the reactions of the allergic patients. (See Fig. 1, A, B, and C for a comparison of allergic with non-allergic reactions to scratch tests.)

TABLE I

RESPONSES TO SCRATCH TESTS WITH SNAKE VENOM

| PATIENTS | M > R | R > M | R++M | R+++M | Allergy M or R | TOTAL |
|------------------------|-------|-------|------|-------|-------------------|-------|
| Control Subjects | 7 | 1 | 6 | 6 | 0 | 20 |
| One Snakebite | 6 | 1 | 2 | 5 | 3 | 17 |
| Multiple Snakebites | 5 | 0 | 1 | 3 | 4 | 13 |
| TOTAL | 18 | 2 | 9 | 14 | 7 | 50 |

R – Rattlesnake venom
M – Cottonmouth moccasin venom

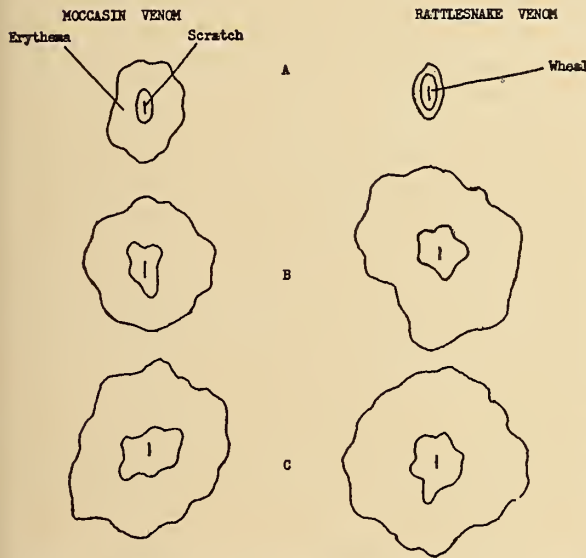


Figure 1. Responses to Scratch Tests with Snake Venom (Actual Size).
A. Original response of control subject.
B. Response of same control subject after injection of allergic patient's serum. (Prausnitz-Kustner test)
C. Response of allergic patient.

DISCUSSION

This survey of allergy to pit viper venom in 30 patients with one or more poisonous snakebites showed seven patients were allergic. The incidence of allergy was not significantly different in patients with one bite as opposed to those with more than one bite. Perhaps this high incidence of venom allergy, 23 per cent, can be explained by the small size of the sample and the fact that 13 of the patients had been exposed more than one time to venom. Neverthe-

less, allergy to venom is not as rare as it is generally thought to be. It seems reasonable that some patients with a previous envenomation may die from anaphylaxis when bitten again.

The individual variation of responses to the scratch tests was interesting. Perhaps this is related to the individual's general body defense mechanisms. Allam,(7) while studying experimental snake venom poisoning in dogs, noted that some dogs succumbed rather easily while others offered considerable resistance to the toxic components of venom. It would appear that this finding may apply to humans. The individuals who only developed small wheals with little or no surrounding erythema when venom was applied to a scratch may have a non-specific type of resistance to the small amounts of venom. Presumably, they would suffer less from an actual envenomation than the patients who had more reaction to the scratch tests.

Weiss(8) found that mice rendered hypersensitive to South American snake venoms may also exhibit hypersensitivity to the venom of a closely related species. This phenomenon was observed in the allergic patients studied here. For example, two of the patients were found allergic to rattlesnake venom, although their several bites were by cottonmouth and copperhead moccasins. Another patient was allergic to both cottonmouth moccasin and rattlesnake venom in spite of the fact that his one envenomation was by a copperhead moccasin. Still another patient was found allergic to Eastern diamondback rattlesnake (*C. adamanteus*) venom, but his envenomations were by other rattlesnake species (*C. horridus atricaudatus* and *C. atrox*).

The scratch tests were read 20 mintues after venom was applied. If one attempted to read the tests later, the reaction was too diffuse to measure accurately. Since pit viper venom contains "spreading factor," the venom was rapidly disseminated into the tissues. Duran-Reynals(9) demonstrated that lesions resulting from reactions between a normal and also a hypersensitive organism and certain agents (toxins and foreign sera) are spread through a much larger area if the agents are injected with testicle extract, which contains "spreading factor." He observed also that the Arthus and Shwartzman reactions were more diffuse and less pronounced when testicle extract was used. Nonetheless, on

the basis of positive scratch and Praustniz-Kustner tests, it is apparent that the seven patients described in this study exhibited hypersensitivity to snake venom.

Since allergy to North American pit viper venom is not too uncommon, and snakebite is an occupational disease among amateur and professional snake handlers, perhaps it would be beneficial for these individuals to be scratch tested for hypersensitivity to the venom of the snakes they are exposed to. At the same time they could be tested for allergy to horse serum so that antivenin therapy could be instituted without delay if needed for envenomation. If a patient allergic to venom was bitten again, then treatment might include epinephrine hydrochloride, antihistamine drugs, ACTH, and Cortisone. These drugs would be used to counteract the allergic effects of venom but *would not take the place of incision and suction or antivenin.*

SUMMARY

1. A survey of allergy to North American pit viper venom in 30 patients with one or more previous envenomations showed seven of them were allergic to venom. Scratch tests using fresh undiluted cottonmouth moccasin (*A. piscivorus*) and rattlesnake (*C. adamanteus*) venoms were used to detect hypersensitivity to venom. The

presence of hypersensitivity was confirmed by Praustniz-Kustner tests.

2. A patient may develop hypersensitivity to the venom of a snake which zoologically is related to the one which bit him. For example, a person may become allergic to rattlesnake venom if he was bitten by a cottonmouth moccasin.

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The President's Page

NEWSPAPER headlines crucified a doctor in New York about his bill in a sensational case. It was even discussed on the floor of the U. S. Senate.

This was probably one of the worst mishandled cases of public relations I have ever heard. I believe the doctor should have talked over his bill with the parents of the child before presenting it; if found excessive either party could have submitted it to the Grievance Committee. This committee has available the facts and the knowledge of local charges to people of these circumstances.

The statement by Dr. Edward Hamilton, chairman of the board of trustees of AMA, was ill-advised. This was a local matter. He could speak for himself alone. Dr. Hamilton had no right to speak for AMA. To date we have no fee schedule forced down our throat from a national level, and I hope it never comes to that. Dr. Hamilton should have consulted the legal and public relations office prior to any statement.

No senator of the U. S. is in possession of all the facts in this case. Therefore, I believe they were out of line in making the statements they made for publication.

From this case, however, let us learn a lesson. Beware of talking for publication until we are in possession of *ALL* the facts. Then consult with our colleagues, especially members of the *PROFESSIONAL AND GRIEVANCE COMMITTEES*. A phone call will usually suffice.

Also, if a case demands a tremendous amount of time and scientific care and treatment, discuss the bill with the patient and/or the responsible party. Tell the people of the dangers, risks, skill exercised, etc., then they probably will agree that the amount is justified.

Think of the effect on you and your patients of this type of unfavorable publicity. If you think first, I am sure such things won't happen in Arizona.

CARLOS C. CRAIG, M.D.

PRESIDENT, ARIZONA MEDICAL ASS'N.

P.S. — Subsequent to submission of this article Dr. Lull's weekly Secretary's Letter stated that Dr. Hamilton had consulted the head office of AMA, public relations and legal, and phoned members of the board of directors prior to his statement to the press. It is still my belief that AMA should not try to dictate fees.

Editorial Page

ARIZONA MEDICINE

Journal of

ARIZONA MEDICAL ASSOCIATION, INC.

VOL. 14

AUGUST, 1957

NO. 8

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.
7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.
8. Illustrations—Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.
9. Reprints—Reprints must be paid for by the author at established standard rates.

The Editor is always ready, willing, and happy to help in any way possible.

(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

ORAL TREATMENT OF DIABETES WITH PILLS

MUCH space has recently been given, in both lay and medical publications, to create the impression that insulin and the needle can soon be thrown aside in the treatment of most our diabetic patients. These releases have carried quotations from our leading medical investigators which are as follows:

"... the most significant advance in diabetes therapy since the discovery of insulin."

"... 50 to 75 per cent success in controlling diabetes. . . ."

"Orinase can be used successfully to replace insulin in 50 to 75 per cent of the nation's diabetic population. . . ."

That Orinase (Tolbutamide) is "successful" will be emphasized by the marketing of the drug. Thus the impression has been created that Orinase is successful in the control of diabetes and further confirmed by making it available to all physicians. The oral treatment will be widely used, unless all physicians are further appraised of the reasons why Orinase should not be used. Our ill-informed patients will demand that they be given these pills.

At the present time it can not be said that any of the sulfonylurea drugs successfully control diabetes, at least as satisfactorily as does insulin. There are major differences in the actions of insulin and of the sulfonylureas. One of the major known differences is that insulin enhances the uptake of glucose by skeletal musculature which is an effect not produced by any other hypoglucemic drug. The new drugs are not "successful" in the management of the thin, ketone producing, severe or juvenile type, and is only "effective" in the obese, non-ketone producer or the mild, stable diabetic.

The effect of these new drugs on development of the complications of diabetes such as arteriosclerosis, cataracts and neurologic degeneration, is wholly undetermined. The use of the word "success" applies only to the hypoglycemic ac-

tion of Orinase in some patients, and it must not be construed to infer that, as has been stated, it controls the disease of diabetes mellitus.

A true evaluation of the hypoglycemic sulfonylurea drugs has been editorialized in the *Annals of Internal Medicine*, May 1957, and *Diabetes*, March-April 1957, issues. These editorials should be required reading before the prescribing of Orinase.

The editorial in the *Annals of Internal Medicine* by DeWitt Stetten Jr., M.D., Ph.D., states;

"The new agent must correct, as insulin does, the fundamental defects in metabolism which, taken together, comprise diabetes mellitus. This criterion, thus far, Tolbutamide has not been demonstrated to meet. Until the mode of action has been clarified, it will be very difficult, in the opinion of this writer, to know with assurance whether or not we are doing the diabetic patient a favor when we lower his blood glucose concentration by the administration of a drug of the sulfonylurea group. It remains for future experiment and observation to determine whether an oral replacement for insulin has indeed been found."

From the editors of *Diabetes* we quote: "It is deplorable that information has been disseminated to create the false hope that diabetes is now an easily controlled disease because "tablets" are available. Our sickest diabetics are in no way helped by these compounds. It is deplorable that some announcements of benefit have been based on short preliminary observation. . . . It is not yet in the interest of good medicine and well-being of diabetic patients to support the release for marketing of an 'insulin substitute' . . ."

"Because the complications of diabetes usually develop slowly, it will take many years, 15 or 20, to determine the effectiveness of any therapeutic antidiabetic agent. Insulin remains our best lifesaving therapeutic agent for the treatment of diabetes mellitus. Other drugs for the control of diabetes must remain in the hands of qualified research teams, to be proved by years of study." (*Arizona Medicine*, Nov. 1956).

L.B.S.

WE WELCOME

THE staff of *Arizona Medicine* is pleased that the Medical Society of the United States and Mexico has designated this publication as its official journal. The articles submitted by *MSUSM*, with the co-operation of our publisher, Mr. McMeekin, and their chairman, Dr. M. Carreras, will be printed in Spanish or English, with a synopsis in the alternate language.

We hope this method will prove of service to all of the doctors of the Southwest. Copies of the publication will be sent to members of both societies.

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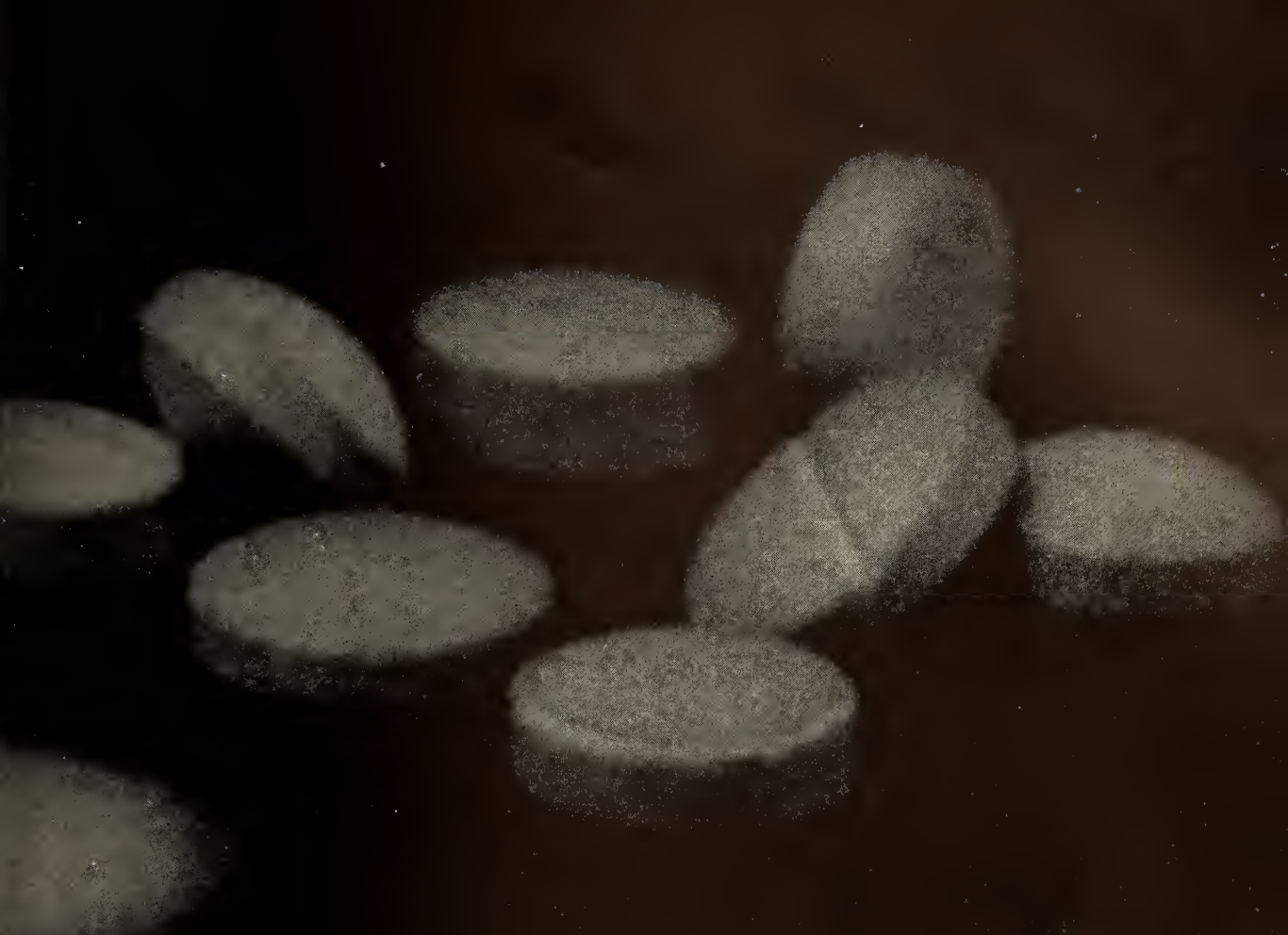
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GREATER SAFETY—high solubility, slow excretion and low dosage help avoid crystalluria. No increase in dosage is recommended; the usual precautions regarding sulfonamides should be observed.

CONVENIENCE—the low maintenance dosage of 1 Gm. (2 tablets) per day for the average adult offers optimal convenience and acceptance to patients.

TABLETS: Each tablet contains 0.5 Gm. (7½ grains) of sulfamethoxypyridazine. Bottles of 24 and 100.

SYRUP: Each teaspoonful (5 cc.) of caramel-flavored syrup contains 250 mg. of sulfamethoxypyridazine. Bottle of 4 fl. oz.

(1) Boger, W. P.; Strickland, C. S. and Gylfe, J. M.: *Antibiot. Med. & Clin. Ther.* 3:378 (Nov.) 1956.

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LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK



The History of Medicine in Arizona

CO₂ POISONING

By N. C. BLEDSOE, M.D.

IN mining, timbers are used to catch up shifting ground to make it safe for the men to work. After working out a raise (a pocket of ore), that portion of the mine is abandoned; but the timbers remain, and, with the moisture and heat (sometimes 130°), a destructive distillation of the wood occurs and carbon dioxide results. Ordinarily it does not cause trouble, as the mines are well ventilated. Occasionally it becomes concentrated and causes trouble. On one occasion, in working an old portion of the mine, the miners had trouble, being overcome by the CO₂ gas. They did not notice the presence of the gas until some one of them fell over unconscious. It got so bad that I had a physician on duty down in the mine, a short distance from the affected area. The men would work in relays, 10 to 20 minutes in the affected area, then rest in fresh air for 20 minutes. When one would be overcome, he would be carried out to fresh air. There was no other treatment, except when some of them became violent and had to be restrained, sometimes by giving sedation, but usually fresh air was sufficient. They usually unloaded their stomachs.

SOLID ROCK BURNS

The statement: "Solid rock burns" sounds fantastic to the ordinary person, but such is the fact. There are several kinds of ore found in a copper mine, and one of them is a sulfide ore. This particular ore contains sulfur, and when great heat is used the sulfur gas goes off in fumes. This can be easily recognized as the white smoke billowing from the tall chimneys of a smelter. You may have wondered why the stacks are so high (200 to 300 feet), they are so

built that the sulfur fumes may be carried high in the air and more easily dissipated. The smoke is heavy and if close to the ground will destroy all vegetation. Many lawsuits have been filed against the smelting companies in the Sulphur Springs Valley on account of the damage the sulfur smoke has caused to the crops.

Underground, when ore is mined out, great empty spaces are left. The weight of the ground above at times causes a slip of rock and the friction of two rock surfaces of sulfide ore causes such intense heat that it sets fire to the sulfur in the ore and burns with a greenish yellow flame. This is no pipe dream, I have actually seen it underground. The fires sometimes burn for years.

PUNCTURE WOUNDS IN COPPER MINES IN BISBEE

During my 26 years of mine practice I never saw a case of tetanus originating in the mines. Thousands of puncture wounds were treated — thorough cleansing of the area, pure phenol applied to punctures, antiseptic dressings. The reason there was no tetanus — the ground in which they worked was virgin soil, never had been contaminated.

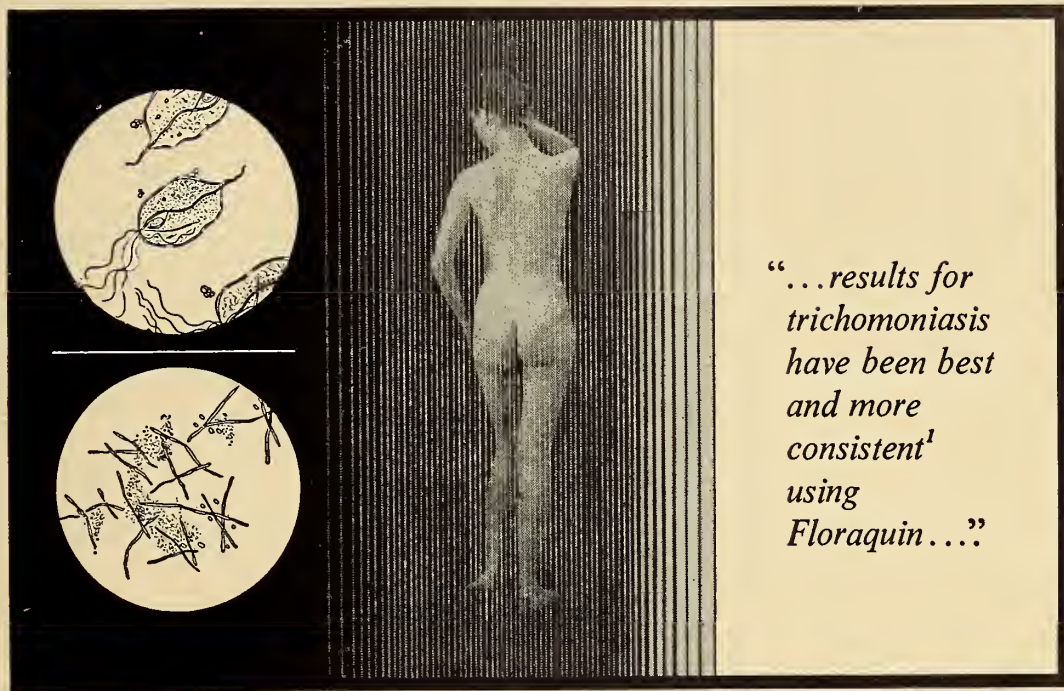
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Floraquin effectively eradicates both trichomonal and monilial vaginal infections through the action of its Diodoquin® content. Floraquin also furnishes boric acid and sugar to restore the normal vaginal acidity which inhibits patho-

gens and favors the growth of protective Döderlein bacilli.

Pitt¹ recommends vaginal insufflation of Floraquin powder daily for three to five days, followed by acid douches and the daily insertion of Floraquin vaginal tablets throughout one or two menstrual cycles. G. D. Searle & Co., Chicago 80, Illinois. Research in the Service of Medicine.

1. Pitt, M. B.: Leukorrhea. Causes and Management, J. M. A. Alabama 25:182 (Feb.) 1956.
2. Parker, R. T.; Jones, C. P., and Thomas, W. L.: Pruritus Vulvae, North Carolina M. J. 16:570 (Dec.) 1955.

SEARLE

Topics of Current Medical Interest

JESSE HAMER, M.D.

VICE President of the American Medical Ass'n. JESSE HAMER, M.D., well-known Phoenix internist, was elected vice president of the American Medical Association at the recent annual meeting held in New York.

Jesse received the Doctor of Medicine degree from Western Reserve University in 1926. He settled in Phoenix in 1928 and since that time has been active in the affairs of the Maricopa County Medical Society and the Arizona Medical Association.

Locally he has served as staff member of Good Samaritan Hospital (secretary, 1930-34; chief of staff, 1936; chief of medical department, 1937 to date), St. Joseph's Hospital, J. C. Lincoln Hospital, Memorial Hospital, St. Luke's Hospital, and the Arizona State Tuberculosis Sanatorium. He is an active participating member of the Phoenix Clinical Club.

Since 1928 he has served the Maricopa County Medical Society as a member and at one time or another as member and chairman of various committees and as member of the board of directors.

He has been a member of the Arizona Medical Association since 1928; council member and delegate to the AMA since 1934. He was president in 1936, speaker of the house several terms, chairman of the legislative committee since 1931 (except 3 years), member of the publishing committee, medical defense committee (chairman 3 times), medicolegal committee (current chairman), insurance investigating committee (current chairman), professional liability insurance investigating committee, central office advisory committee, legal service committee, medical school committee, and osteopathy liaison committee.

Regionally, he is a member of the Southwestern Medical Association, serving several term on the board of governors; was first vice president in 1940, and a member of the editorial staff of Southwestern Medical Journal, 1934-41. He is now serving the United Public Health League of Western States as secretary-treasurer.

Nationally, he has been a member of the AMA since 1928; and has served as delegate from Ari-



Jesse D. Hamer, M.D.

zona to the house of delegates since 1934; was on the council on medical service (1947-53); and is on the advisory committee to the board of trustees of AMEF currently.

He is also a member of Alpha Omega Alpha, the American College of Physicians (life member), the American Heart Association, the Endocrine Society, and the Geriatric Society.

He belongs in addition to two international groups, the World Medical Association, and the Academy Internationale of Medicine.

Besides the numerous positions Jesse has held in medical organizations, he has been active in community projects. For more than 25 years he has served the Red Cross in various capacities, being chapter chairman in 1936. Likewise, for a quarter of a century, he has served the Boy Scouts, being on the board of directors since 1932. He has been a member of the Phoenix Rotary Club since 1930, is a founder-member of the Community Health Council, and a member of the survey committee on recreational needs and services of the Phoenix Community Council. He is a member and was active in the organization of the Arizona chapters of the American Cancer Society and the American Heart Association, and of the Arizona Blue Cross.

Jesse is a veteran of World War I, and has served during and since World War II as commander, medical corps reserve, United States Public Health Service.

In spite of these many activities, Jesse has found time to conduct a busy practice of medicine, is esteemed highly by his colleagues, and is beloved by his patients.

The members of the medical profession in Arizona are indeed proud of Jesse and are pleased with this honor he has received, and that he has brought to us.

Congratulations, Jesse. We know you have not stopped yet. On to the top!

THE ARIZONA MEDICAL ASSOCIATION, INC.

REPORT OF THE COMMITTEE ON REPORTS

President

A. I. Podolsky, M.D.

THE past year has been marked by an opportunity to meet and work with a group of stalwart men dedicated to the finest ideals in medicine. I refer to the members of the council, committees and boards whose reports are now in your hands, and whose unselfish devotion and industry are reflected in the progress of The Arizona Medical Association. To all of you, I give my heart-felt thanks.

Medicare is now a reality. The socio-economic implications of this plan may be considered debatable. I personally consider it as embarking on an experiment where we, like little children, taste of the icing of a cake, the actual quality of which we do not know. It is another form of dabbling in socialism. I hope that the end result will not be a "bellyache."

The legislation committee is always alert in the detection of proposed bills that may be detrimental to the interests of improved health of the citizens of this state, and of the nation. It is always prepared to support legislation that is constructive and protective of good health measures. The benevolent and loan fund committee has under consideration a challenging project which merits our attention, and has prepared a scholarly report.

I take great pride in announcing to you that the association has again been awarded a certificate of merit by the American Medical Association

for our contributions to AMEF. I hope that we will continue to generously support this bulwark against governmental interference with the education and training of our young doctors.

We have added to the central office staff an assistant executive secretary, Mr. Paul R. Boykin. The association headquarters have been moved to a larger suite in the same building and share that space with the Board of Medical Examiners of the State of Arizona.

I thank you for your kindness in helping me during this past year by your devoted service on committees and boards, and by your wise counsel. I also thank you for having been able to serve as an officer of this association. It is my sincere hope that this meeting will be successful, and will bring to fruitful completion the plans and dreams of those who are tireless in their efforts to build an even greater Arizona Medical Association.

Secretary

D. W. Melick, M.D.

The secretary calls attention to the increased activity on the state level which necessitated the employment of additional personnel. This has been in the past due to the increased membership which now numbers 857, an addition of 57 since last year.

Editor-In-Chief *Darwin W. Neubauer, M.D.*

The editor-in-chief reports a reorganization of the editorial staff of the Journal which was carried out last year. A specific editorial board was organized to review material and establish policy. Associate editors have been appointed to review material in their various fields of specialization. He requests the desirability that associate editors in various sub-specialties submit a resume of the meetings. Reporters have been appointed for various districts of the state to obtain regional information for publication in the Journal. The content of the Journal has increased from 32 to 35 to an excess of 50 pages monthly.

Historian

Howell Randolph, M.D.

The historian through correspondence has promoted and stimulated the printing of the articles on medical history in Arizona Medicine. He invites the contribution of physicians interested in the history of medicine with regard to the impact on the lives of Arizona physicians.

Councilors

The report of councilors was made without any additional recommendations or comments except from Dr. Fred Knight who recommends

a comprehensive plan for administering of and charging for the poliomyelitis vaccine, and that it be a principal function of the state convention.

COMMITTEES

Medical Education Committee

D. W. Melick, M.D., Chairman

A complete report of medical manpower requirements in the West will be published in Arizona Medicine. This committee has no recommendations to make until this report is completed.

Delegates to AMA *Jesse D. Hamer, M.D.*

All sessions of the House of Delegates of the American Medical Association were attended by both Doctor Hamer and our executive secretary, Mr. Carpenter. These reports have been published in Arizona Medicine.

Arizona Committee of the American

Medical Education Foundation

H. W. Kohl, M.D., Chairman

The chairman, Doctor Kohl, attended the sixth annual meeting in Chicago in 1957.

He states during the past year there has been a separation of AMEF and the National Fund for Medical Education. This is considered to be an excellent move, since the Ford Foundation grants go to medical education through the national fund. In 1956 AMA gave AMEF an additional \$100,000 as a substitute for the Ford Foundation grant. Also in his report is a breakdown of monies given to medical schools in 1956 by the national fund. The total amount of national fund grants distributed in 1956 was \$3,067,100.

Among the list of state medical associations, Arizona is to be commended. In 1955, 729 dues-paying members contributed \$4,025 and in 1956, 739 members donated \$4,893.87. Of the 1956 amount, \$3,695 was a treasury grant authorized by council, \$84 by the state women's auxiliary, \$117 Maricopa County Woman's Auxiliary, \$295 Pima County Woman's Auxiliary, \$90 Yavapai County Woman's Auxiliary, \$79.87 Yuma County Woman's Auxiliary, and \$533 by individual physicians.

Doctor Kohl, as chairman, requests that the amount of \$100 be budgeted to his committee so that he may conduct a mailing program during 1957.

Professional Liability Insurance

Investigating Committee

Howard C. Lawrence, M.D., Chairman

This committee has been negotiating with the Nettleship Company of Los Angeles regarding possible underwriting and servicing of a group professional liability insurance program for the members of the association. The final proposal is not yet ready for submission.

Medical Economics Committee

Stuart Sanger, M.D., Chairman

The medical economics committee reviewed a new supplemental disability insurance program at the state level and reviewed the recommendations of the industrial relations committee as to revision of the industrial commission fees.

Central Office Advisory Committee

W. R. Manning, M.D., Chairman

This committee reports that because of the ever-increasing volume of work in the central office of the association, which includes the administrative offices of the Board of Medical Examiners of the State of Arizona, the central office advisory committee was established. At the first regular meeting this problem was studied and it was recommended to the council that a male assistant to the executive secretary was needed. This position was filled by Mr. Boykin on a trial basis beginning Oct. 16, 1956. They recommend that theirs be a continuing committee.

Professional Liaison Committee

W. B. Steen, M.D., Chairman

This committee has had several meetings with other professional groups. These are: Arizona pharmaceutical group, the Arizona Bar Association and the Arizona Dental Association. They reviewed the matter of selection of doctors or pharmacists as a free choice to the patient or customer. They have discussed obesity control treatments and have called attention to the responsibility for telephoned narcotic prescriptions. They recommend that additional cooperation among these groups is necessary. They are exploring the possibility of a joint professional building.

Veterans' Medical Affairs

Liaison Committee

H. D. Ketcherside, M.D., Chairman

This committee was inactive during the year because of lack of any problems arising which would justify calling the committee together.

Joint Committee On Improvement

Of Nursing Services

Francis J. Bean, M.D., Chairman

This committee has held two meetings during the previous year. They call attention to the fact that the American League of Nursing has established a chapter in the state. A collegiate program of nursing at the University of Arizona is definite and will start this fall. There will be a practical nursing school open in September in Tucson.

Medico-Legal Committee

Jesse D. Hamer, M.D., Chairman

This committee reports that no meeting with a similar group of the State Bar Association was held. The committee is hopeful of having a future meeting. The law department of the American Medical Association will sponsor regional meetings for discussion of medico-legal matters. Arizona was represented by the chairman, Doctor Hamer, at the regional meeting held in Denver, Colo., this year.

Insurance Investigating Committee

Jesse D. Hamer, M.D., Chairman

The committee has been inactive during the past year because of the lack of subject matter which would necessitate calling a meeting. However, the chairman recommends that this committee be continued.

Air Pollution Committee

George G. McKhann, M.D., Chairman

This committee reports that air pollution study continues in co-operation with the Maricopa County Board of Supervisors. There will be additions made to this joint commission.

Grievance Committee

Harry E. Thompson, M.D., Chairman

The chairman indicates that grievances have been less in number the past year, probably due to better doctor-patient relationship. He recommends that council consider the problems of complaints from insurance carriers and asks that council advise whether this is within the scope of the grievance committee. He stresses that all grievances, if possible, should be settled at a local level. The constitution and by-laws committee should be instructed to define through council a clarification of their activities.

Joint Commission of Arizona Blue Shield

H. D. Ketcherside, M.D., Chairman

This report was submitted to this house of delegates when we met as delegates of the Blue Shield Corporation. The committee felt that no further report was necessary.

Safety Committee

MacDonald Wood, M.D., Chairman

This committee submits recommendations for its enlargement and improvement. Our committee feels that these recommendations should be forwarded to council for their study and consideration.

Medicare Committee

Frank W. Edel, M.D., Chairman

A detailed account of the evaluation and development of the Medicare program has been printed in the January 1957 issue of Arizona Medicine. The chairman in his report thanks council and all his co-workers for their cheerful and helpful co-operation.

Industrial Relations Committee

Lindsay E. Beaton, M.D., Chairman

This committee described in detail the procedure utilized in the examination of patients for the industrial commission to provide an objective, unbiased opinion when disputes have arisen in the management or disposition of these cases. A procedure has been worked out whereby x-ray films may be handled more expeditiously. This committee has drawn up and distributed suggested rules governing consultations on industrial commission clients. They have also proceeded with an upward revision of the industrial commission fee schedule, and negotiations are now under way with the commissioners of the Industrial Commission of Arizona.

Publishing Committee

Darwin W. Neubauer, M.D., Chairman

Our committee, and that is the committee of which I am chairman, commends the editor and his committee and acknowledges the fact that Arizona Medicine received the second place commendation of the newspaper editors of the state for the excellency of its publication.

Constitution and By-Laws Committee

W. R. Manning, M.D., Chairman

This committee reports two resolutions which will be presented before the house. The committee reports that a majority of the component societies do not conform to the constitution and by-laws of the Arizona Medical Association. These require that they have on file an up-to-date constitution for their own society. This committee has made certain recommendations in regard to local component societies. They also suggest revision of our Arizona state constitution and by-laws. Your committee on reports recommends that this be referred to council for their action. Now that might be something else

for you men to take back to your county societies, not only Doctor Yount's treasurer's report, but the message that in many cases no existing constitution or by-laws is held by your component society.

Legislation Committee

Jesse D. Hamer, M.D., Chairman

I would like to quote only the first paragraph of this rather lengthy and excellent report of Doctor Hamer and I quote: "The 23rd Legislature of the State of Arizona, First Regular Session, is entitled to the plaudits of the people in that they achieved a notable record of adjournment within the 60 days allotted. It is the first time in many years that this objective has been achieved. It is further recognized, taking everything into consideration, that this legislature should be commended for its accomplishments. The session was not without problems concerning the medical profession, and your legislation committee, legal counsel and staff devoted considerable time to the review of a multiplicity of measures introduced, and took action supporting those approved by council and exerted every effort in the defeat of those which were not in the best interests of the health and welfare of the people."

This committee, that is, our committee of which I am chairman, has reviewed the excellent work on bills as they were submitted by the legislation committee. We commend this committee on the excellency of their work and it is our hope that this report, including federal legislation, may be published fully in Arizona Medicine.

President-Elect of the Woman's Auxiliary of the Arizona Medical Association, Inc.

Mrs. Charles S. Powell

Mrs. Charles Powell reported the continuing work of the auxiliary in its many projects. She requested the budgeting of at least \$1,000 from the Arizona Medical Association so that work in student nurse recruitment, civil defense and mental health can be successfully carried out. Your committee, that is, my committee, recommends to the delegates the approval of their request for \$1,000.

Benevolent and Loan Fund Committee

E. A. Born, M.D., Chairman

Doctor Born reports that his committee has been instructed to establish a loan fund. Consideration was given to the allocation of funds for direct grants to members of the association

in distress, changes of the by-laws and consideration of a scholarship for the University of Arizona was also indicated. The committee recommended that the Arizona Medical Association, through the council, award from the general fund \$500 per year for a scholarship to the University of Arizona to be for the benefit of a third or fourth year pre-medical student needing financial assistance to continue his or their course of study. The award is to be based on (1) the financial need of the applicant, (2) his scholastic standing, which is to be satisfactory but not necessarily outstanding, and (3) his desire and intention to continue studies leading to an M.D. degree. Any portion of this award which is not used is to be added to the award of the following year or years. This committee, the committee on reports, recommends that this be submitted to council for further study.

Arizona Advisory Committee to the Selective Service System

Joseph Madison Greer, M.D., Chairman

This committee has continued its operation during the year 1956 reviewing circumstances surrounding the call for induction by the selective service system affecting the medical, dental, veterinary and nursing professions. The committee felt that with the introduction of the Medicare program, the doctor draft law would not be continued after its expiration July 1 of this year.

Osteopathic Liason Committee

Reed D. Shupe, M.D., Chairman

This committee calls attention to the fact that through a rather insidious form of legislative effort, the osteopathic physicians are attempting not only to lower the educational requirements for the practice of osteopathy, but at the same time remove certain requirements of the law which require that they must identify themselves as osteopathic physicians and surgeons apparently in an attempt to identify themselves on the principle encountered in the promotion and development of a community hospital in Glendale, Arizona. As yet no satisfactory solution has been reached, but negotiations are continuing so that it will be possible for that community to enjoy the advantages of a medical facility. It seems to the report committee that this report, and it contains recommendations regarding consultations, should be referred to council for its consideration ultimately.

Co-Ordinating Committee on School Health

Elizabeth H. Laidlaw, M.D., Chairman

This committee is continuing its work on a plan for certification of school nurses and the incorporation in the Arizona elementary and high schools of a health program.

*Medical Defense Committee**E. A. Born, M.D., Chairman*

There have been no requests from members of this association for opinion and advice. Mr. Blaine Shimmel, attorney, has requested no assistance from this committee since February 1956.

BOARDS*Public Relations Board**James T. O'Neil, M.D., Chairman*

The public relations board held a meeting on Oct. 7, 1956. At this meeting the board approved a contribution of \$50 each to the Central Arizona Science Fair and to the Southern Arizona Science Fair.

The board highly recommended to council that an effort be made to have a committee represent all doctors in negotiations between labor and management, in which medical benefits were to be included among the fringe benefits.

The board approved participation in the Arizona State Fair and, with the co-operation of the armed forces, was able to set up a booth with other agencies interested in health measures at the fair.

The utilization of the rural health articles sent out by the AMA headquarters was decided upon, and the board has arranged to have these articles published in the Arizona Ranch Farmer. Mr. Rich Johnson, editor, has been very co-operative in handling these procedures with the public relations board.

The program of information pamphlets available to the physicians was continued.

*Professional Board**Ronald S. Haines, M.D., Chairman*

The committee on reports has reviewed the very brief report of the professional board. In the past, this board has been one of our most active boards and it is the feeling of the report committee that the professional board has a more complete and comprehensive program than appears in their report which reads as follows: "A formal meeting was held on Sunday, Feb. 24, 1957. Several of the sub-committee chairmen have reported on their activities, and the few activities on the Crippled Children's Service have already been reported."

RESOLUTIONS**INTRODUCED AND PASSED****1957 ARIZONA MEDICAL ASSOCIATION
CONVENTION**

WHEREAS, it appears that historically the association has been in error in using in its corporate seal the staff of Mercury instead of the proper caduceus symbolic of medicine, the staff of Aesculapius, and

WHEREAS, the association is desirous of correcting this grievous error; now, therefore, be it

RESOLVED that The Arizona Medical Association, Inc., hereby revoke its former corporate seal improperly using the caduceus of Mercury, and hereby adopts the new corporate seal, the imprint of which is hereto affixed, using the caduceus symbolic of medicine depicting the staff of Aesculapius.

**THE ESTABLISHMENT OF AN ARIZONA
POISONING CONTROL PROGRAM**

WHEREAS record of vital statistics of the United States indicate that the officially recorded incidence of annual illness from ingestion of poisons has remained consistently high above the 800,000 mark and annual mortality above the 2,000 mark during the past decade while marked progress is recorded in incidence and mortality for major diseases affecting man, and

WHEREAS there is definite need for a statewide program for gathering specific data concerning poisons and for disseminating information to aid in prevention and expedite treatment of poisoning in Arizona; now therefore be it

RESOLVED that The Arizona Medical Association approve the development of a statewide poisoning control program to include a proposed Poisoning Control Information Center in the University of Arizona College of Pharmacy as well as a number of emergency poisoning control units at major hospitals in the state; and be it further

RESOLVED that the physicians of Arizona co-operate fully in submitting reports on poisoning cases, through the use of prepared forms, to the end that periodic bulletins may be issued which will be informative to the physicians of the state and will promote a public education program for the prevention of poisoning; and be it further

RESOLVED that the need for legislation be

determined and action taken by the committee on legislation toward providing a legal requirement for the registration of toxic constituents and antidotes for all poisonous commercial products marketed in Arizona; and be it further

RESOLVED that we recommend to the state medical council that it give consideration to the appointment of an ad hoc committee to be known as the committee on poisoning control to implement the intent of this resolution; to act as a liaison committee with the University of Arizona College of Pharmacy, the State Pharmaceutical Association, and other interested bodies; and be it further

RESOLVED that this information be distributed to the secretaries of the individual county medical societies and given direct to each doctor, as members of this association.

W. B. STEEN, M.D., COUNCILOR,
SOUTHERN DISTRICT

MEDICAL SERVICES STANDARDS AND NEGOTIATIONS

WHEREAS modern hiring practices of many companies and corporations include the supplying of medical services as a fringe benefit; and

WHEREAS most negotiations between unions and employers include medical services as a topic of discussion; and

WHEREAS the doctors of medicine, whose services are being so bargained for, often find themselves subjected to plans which are contrary to medical ethics; and

WHEREAS there are no representatives for the doctors of medicine at such negotiations in which medical benefits are discussed; now therefore be it

RESOLVED that the Council of The Arizona Medical Association appoint a subcommittee working under the medical economics committee to study the various plans now in effect, to evolve suitable standards for such plans, and to suggest methods whereby there may be medical representation at all negotiations in which medical services are discussed, and

RESOLVED that this committee notify all companies operating in this state as well as all unions that such a committee has been established and requesting opportunity to discuss with any of them the standards which the com-

mittee has developed, and be it further

RESOLVED that all such standards developed by this subcommittee shall be approved through the committee on medical economics and the state medical council.

J. BRUCE TUCKER, M.D., DELEGATE
PINAL COUNTY MEDICAL SOCIETY

SENATE BILL 434, 85TH CONGRESS

WHEREAS, One of the cornerstones of the bipartisan Hoover commission, recommendations was improved financial management of the federal government, and

WHEREAS, We believe that the concepts embodied in Senate Bill 434 to insure maximum control and review of governmental expenditures by congress represent the greatest advance which this government can make in the field of improved budgeting, and

WHEREAS, Under present procedures there is no effective control over expenditures either by congress or in the executive branch; now therefore be it

RESOLVED That we, the members of the House of Delegates of The Arizona Medical Association, Inc., assembled April 11, 1957, in Yuma, Arizona, endorse and recommend passage of SB-434 which would provide that the executive budget and congressional appropriations be in terms of estimated annual accrued expenditures, namely charges for the cost of goods and services estimated to be received, and be it further

RESOLVED, That The Arizona Medical Association, Inc., and its members give support to all efforts to inform citizens concerning the findings of the commission and to induce greater citizen participation in governmental affairs, and be it further

RESOLVED, That copies of this resolution be forwarded to (a) national headquarters of the organization, (b) Senators Barry M. Goldwater and Carl Hayden representing the State of Arizona and Representatives Stewart L. Udall and John J. Rhodes, of the State of Arizona, and (c) the Citizens' Committee for the Hoover Report, 777 Fourteenth Street, N.W., Washington 5, D.C.

JESSE D. HAMER, M.D., CHAIRMAN,
LEGISLATION COMMITTEE



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MEDICAL DIRECTOR
DUKE R. GASKINS, M. D.

Dear Doctor:

"Disclosure of Medical Record Information: A Re-Appraisal" is an interesting article in HOSPITALS, the official journal of the American Hospital Association. This article is written by James E. Ludlam and Theodore M. McCabe, Jr. The first part of this two-part article appeared in the July 16, 1957, issue.

While this article is written specifically for hospital administrators and record librarians, the article also brings out the position of the physician.

The introduction states, "Some hospital people do not give sufficient weight to the fact that insurance companies have a legitimate interest in most, if not all, of the information they seek. The carriers which do not check their claims will not long remain solvent. Further, the insurance company must also develop statistical information as a basis for rate making."

It is good to see that hospital administrators and physicians are realizing a responsibility to the insurance companies that pay a good part of their fees.

I can assure you that we at HBA never request information unless it is necessary to make a proper and just decision. Of course, a properly signed authorization is always enclosed with our request for information.

Very truly yours,

HOSPITAL BENEFIT ASSURANCE

Duke R. Gaskins, M. D.
Medical Director

DRG:sk

DR. DAVID B. ALLMAN 111TH AMA PRESIDENT

IN taking the oath of office as 111th president of the American Medical Association June 4 in New York, Dr. David Bacharach Allman dedicated himself to the task of preserving the best in the personality of medicine and in the personality of America. The 65-year-old Atlantic City surgeon emphasized the fact that physicians today minister "not only to the human body and its ills, but also to human hearts, minds and emotions."

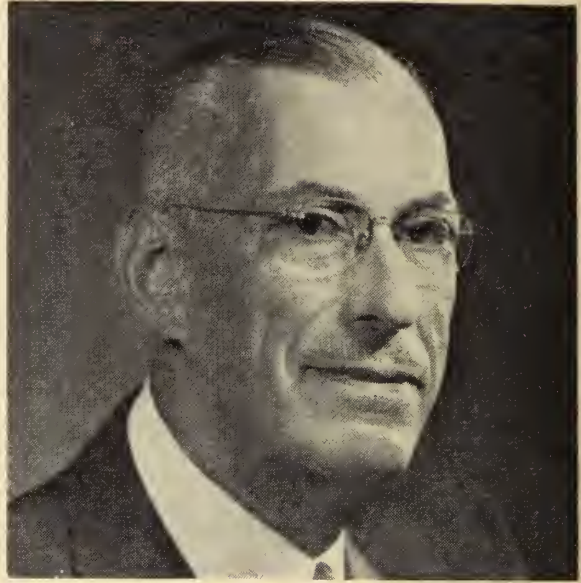
The dedicated doctor, Dr. Allman said, "knows that sympathy and understanding are just as important as scientific knowledge" and that the doctor knew this "in his heart even before he went to medical school." Along with concern over human, personal values, Dr. Allman said that "the physician is primarily a man of science — educated and trained to think, observe, investigate, evaluate and make careful judgments." He further pointed out the physician's obligations as an American citizen "to contribute his share of actions and opinions, especially on issues involving health and medical care."

Dr. Allman has been a prominent figure in the activities of the American Medical Association for many years. In 1951, he was elected to the AMA board of trustees. In addition, he served as a member and chairman of the AMA committee on legislation.

Dr. Allman was born in Philadelphia July 11, 1891, and shortly thereafter his parents moved to Atlantic City. They lived with his grandparents in the Bacharach family home which later became Dr. Allman's home and office. The Bacharach family, including Dr. Allman's mother, founded the Betty Bacharach Home for Afflicted Children, which today has an annual operating budget of nearly \$1 million, based entirely on voluntary contributions. Dr. Allman now devotes much of his time to the home which has grown into one of the most widely known and respected institutions along the Atlantic coast.

Dr. Allman formally announced his retirement from medical practice in 1950. His 35 years of practice included 30 years as surgical director and chief surgeon of Atlantic City Hospital.

He was graduated from Jefferson Medical Col-



Dr. David B. Allman

lege in 1914 and interned at Atlantic City Hospital in 1914-15. There he met nurse Katherine Bothwell whom he married in 1922. Mrs. Allman has long been active in the woman's auxiliary to the AMA, serving as president in 1949-50. When Dr. Allman was named president-elect of the AMA at the Chicago meeting in 1956, it marked the first time that a husband and wife were ever elected to the two top offices.

REPORT OF ACTIONS OF THE HOUSE OF DELEGATES AMERICAN MEDICAL ASS'N. 106th Annual Meeting June 3-7, 1957 New York City

THIS summary report of actions of the House of Delegates of the American Medical Association during its 106th annual meeting held in New York City, June 3 through 7, 1957, is submitted to give the membership of our association immediate reference to a few of the more important subjects dealt with during the sessions. As usual, a more detailed report on all actions taken will appear in subsequent issues of the Journal of the American Medical Association.

Revision of the Principles of Medical Ethics, relations with the United Mine Workers of America Welfare and Retirement Fund, the federal government's Medicare program, new

standards for medical schools, a new statement on occupational health programs and the issue of social security benefits for physicians were among the wide variety of subjects acted upon. *NEW PRINCIPLES OF MEDICAL ETHICS*

The house approved the long-discussed revision of the Principles of Medical Ethics, originally submitted at the 1956 annual meeting in Chicago. The final version, presented by the council on constitution and by-laws and then amended by reference committee and house discussions in New York, now reads as follows:

"PREAMBLE

"These principles are intended to aid physicians individually and collectively in maintaining a high level of ethical conduct. They are not laws, but standards by which a physician may determine the propriety of his conduct in his relationship with patients, with colleagues, with members of allied professions, and with the public.

"*Section 1.* The principal objective of the medical profession is to render service to humanity with full respect for the dignity of man. Physicians should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion.

"*Section 2.* Physicians should strive continually to improve medical knowledge and skill, and should make available to their patients and colleagues the benefits of their professional attainments.

"*Section 3.* A physician should practice a method of healing founded on a scientific basis; and he should not voluntarily associate professionally with anyone who violates this principle.

"*Section 4.* The medical profession should safeguard the public and itself against physicians deficient in moral character or professional competence. Physicians should observe all laws, uphold the dignity and honor of the profession and accept its self-imposed disciplines. They should expose, without hesitation, illegal or unethical conduct of fellow members of the profession.

"*Section 5.* A physician may choose whom he will serve. In an emergency, however, he should render service to the best of his ability. Having undertaken the care of a patient, he may not neglect him; and unless he has been discharged he may discontinue his services only after giving adequate notice. He should not solicit patients.

"*Section 6.* A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill, or tend to cause a deterioration of the quality of medical care.

"*Section 7.* In the practice of medicine a physician should limit the source of his professional income to medical services actually rendered by him, or under his supervision, to his patients. His fee should be commensurate with the services rendered and the patient's ability to pay. He should neither pay nor receive a commission for referral of patients. Drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interests of the patient.

"*Section 8.* A physician should seek consultation upon request; in doubtful or difficult cases; or whenever it appears that the quality of medical service may be enhanced thereby.

"*Section 9.* A physician may not reveal the confidence entrusted to him in the course of medical attendance, or the deficiencies he may observe in the character of patients, unless he is required to do so by law or unless it becomes necessary in order to protect the welfare of the individual or of the community.

"*Section 10.* The honored ideals of the medical profession imply that the responsibilities of the physician extend not only to the individual, but also to society where these responsibilities deserve his interest and participation in activities which have the purpose of improving both the health and the well-being of the individual and the community."

In approving the new Principles of Medical Ethics, the house of delegates also reaffirmed the "Guides for Conduct for Physicians in Relationships with Institutions," adopted in 1951, and requested the board of trustees to devise and initiate a campaign to educate both physicians and the general public to the dangers inherent in the illegal corporate practice of medicine in its various forms.

GUIDES FOR RELATIONS WITH UMWA FUND

In a key action on the basic issue of third-party intervention, as it affects the patient's free choice of physician and the physician's method of remuneration, the house adopted the "Suggested Guides to Relationships Between State

and County Medical Societies and the United Mine Workers of America Welfare and Retirement Fund," which were submitted by the AMA Committee on Medical Care for Industrial Workers. In approving the guides, the house also recommended that the board of trustees study the feasibility and possibility of setting up similar guides for relations with other third-party groups such as management and labor union plans.

The statement, which outlines both medical society and UMWA responsibilities, contains these "general guides:"

"1. All persons, including the beneficiaries of a third-party medical program such as the UMWA Fund, should have available to them good medical care and should be free to select their own physicians from among those willing and able to render such service.

"2. Free choice of physician and hospital by the patient should be preserved:

"(a) Every physician duly licensed by the state to practice medicine and surgery should be assumed at the outset to be competent in the field in which he claims to be, unless considered otherwise by his peers.

"(b) A physician should accept only such terms or conditions for dispensing his services as will insure his free and complete exercise of independent medical judgment and skill, insure the quality of medical care, and avoid the exploitation of his services for financial profit.

"(c) The medical profession does not concede to a third party such as the UMWA Welfare and Retirement Fund in a medical care program the prerogative of passing judgment on the treatment rendered by physicians, including the necessity of hospitalization, length of stay, and the like.

"3. A fee-for-service method of payment for physicians should be maintained except under unusual circumstances. These unusual circumstances shall be determined to exist only after a conference of the liaison committee and representatives of the fund.

"4. The qualifications of physicians to be on the hospital staff and membership on the hospital staffs is to be determined solely by local hospital staffs and by local governing boards of hospitals."

THE MEDICARE PROGRAM

The house considered three resolutions dealing with the federal government's Medicare program for the dependents of servicemen. The delegates adopted one resolution condemning any payments under the Medicare program "to or on behalf of any resident, fellow, intern or other house officer in similar status who is participating in a training program." Government sanction of such payments, the house declared, would give impetus to the improper corporate practice of medicine by hospitals or other non-medical bodies. Such proposals, the house added, would violate traditional patterns of American medical practices, seriously aggravate problems of hospital-physician relationships, encourage charges by hospitals for residents' services to patients not under the Medicare program, and create a variety of additional problems in such areas as medical licensure and health insurance.

In another action on Medicare, the house recommended that the decision on type of contract and whether or not a fee schedule is included in future contract negotiations should be left to individual state determination. In this connection, however, the house restated the AMA contention that: the Dependent Medical Care Act as enacted by congress does not require fixed fee schedules; the establishment of such schedules would be more expensive than permitting physicians to charge their normal fees, and fixed fee schedules would ultimately disrupt the economics of medical practice.

The house also suggested that the AMA attempt to have existing Medicare regulations amended to incorporate the association's policy that the practice of anesthesiology, pathology, radiology and physical medicine constitute the practice of medicine, and that fees for services by physicians in these specialties should be paid to the physician rendering the services.

NEW STATEMENT ON MEDICAL SCHOOLS

To replace the "Essentials of an Acceptable Medical School," initially approved by the house of delegates in 1910 and most recently revised in 1951, the house adopted a new statement entitled: "Functions and Structures of a Modern Medical School." Presentation of the document followed a year of careful study by the council on medical education and hospitals in collaboration with the Association of Amer-

ican Medical Colleges.

The statement is intended to provide flexible guides which will "assist in attaining medical education of ever higher standards" and "serve as general but not specific criteria in the medical school accreditation program." The document encourages soundly conceived experimentation in medical education, and it discourages excessive concern with standardization.

"No rigid curriculum can be prescribed for accomplishing the objectives of medical education," it states. "On the contrary, it is the responsibility of the faculty of each school continually to re-evaluate its curriculum and to provide in accordance with its own particular setting and in recognition of advances in science a sound and well-integrated educational program."

OCCUPATIONAL HEALTH PROGRAMS

The house also approved a new statement on the "Scope, Objectives and Functions of Occupational Health Programs," submitted through the board of trustees by the council on industrial health. The board report to the house said: "The statement describes and defines orthodox in-plant medical programs as understood in this country today and distinguishes clearly between such programs and the various plans for comprehensive medical care of the sick. It should help to resolve misunderstandings concerning the specialty of occupational medicine."

In adopting the statement, the house agreed with a reference committee report which declared that "the house has before it a statement which for the first time clearly defines the scope, objectives and functions of occupational health programs. It marks the needs and boundaries of occupational medicine. It states in a positive fashion the proper place of occupational health programs in the practice of medicine and it clearly charts the pathways of communication between physicians in occupational health programs and physicians in the private practice of medicine."

SOCIAL SECURITY FOR DOCTORS

Two resolutions favoring compulsory inclusion of physicians in the federal social security system and another one calling for a nationwide referendum of AMA members on the issue were rejected by the house. The delegates reaffirmed their opposition to compulsory coverage of physicians under the Old Age and Sur-

vivors Insurance provisions of the Social Security Act. They also recommended a strongly stepped-up informational program of education which will reach every member of the association, explaining the reasons underlying the position of the house of delegates in this issue. The house at the same time reaffirmed its support of the Jenkins-Keogh bills.

MISCELLANEOUS ACTIONS

In considering 66 resolutions and many additional reports from the board of trustees, councils and committees, the house also:

Congratulated the board and the committee on poliomyelitis for their prompt action in stimulating national interest in the polio immunization program;

Recommended further study and a progressive program of action, probably including legislative changes, to solve the problem of narcotic addiction;

Urged a more careful screening of television and radio patent medicine advertisements;

Directed the board of trustees to investigate the indiscriminate use of stimulants such as amphetamine, particularly in relation to athletic programs;

Directed the speaker to appoint a committee of five house members to study the Heller report, a management survey of the association's organizational mechanisms;

Commended the law department for its special report on professional liability and urged state and county medical societies to establish claims prevention programs and to show the new film, "The Doctor Defendant;"

Opposed the establishment of any further veterans' facilities for the care of non-service-connected illnesses of veterans;

Condemned the compulsory assessment of medical men and staff members by hospitals in fund-raising campaigns;

Commended the television program, Dr. Hudson's Secret Journal, its producers and its star, Mr. John Howard, for an outstanding contribution to the public interest and welfare, and

Recommended payment of transportation expenses of section secretaries for AMA meetings which they are required to attend.

ELECTION OF OFFICERS

Dr. Gunnar Gundersen of La Crosse, Wis., member of the AMA Board of Trustees since 1948 and chairman for the past two years, was

unanimously chosen president-elect for the year ahead. Dr. Gundersen, who also was first chairman of the Joint Commission on Accreditation of Hospitals from 1951 to 1953, will become president of the American Medical Association at the June 1958, meeting in San Francisco. There he will succeed Dr. David B. Allman of Atlantic City, N. J., who became the 111th president at the Tuesday night inaugural ceremony in the Grand Ballroom of the Waldorf-Astoria Hotel.

In addition to Dr. Gundersen, the new president-elect, the following officers were selected by the house on Thursday:

Your own delegate to the AMA had the distinction of being nominated and unanimously chosen vice president; Dr. George F. Lull of Chicago, secretary; Dr. J. J. Moore of Chicago, treasurer; Dr. E. Vincent Askey of Los Angeles, speaker, and Dr. Louis Orr of Orlando, Fla., vice speaker.

Four new members were elected to the board of trustees: Dr. George Fister of Ogden, Utah, to succeed Dr. James R. Reuling; Dr. Cleon Nafe of Indianapolis, Ind., to succeed Dr. James R. McVay; Dr. James Z. Appel of Lancaster, Pa., to replace the late Dr. Thomas P. Murdock, and Dr. Raymond McKeown of Coos Bay, Ore., to replace Dr. Gundersen. Dr. Edwin S. Hamilton of Kankakee, Ill., was elected chairman of the board at its organizational meeting after the elections in the house.

Dr. Homer L. Pearson Jr. of Coral Gables, Fla., was renamed to the judicial council. Two new members were elected to the council on medical education and hospitals: Dr. Clark Wescoe of Lawrence, Kans., to succeed Dr. Weiskotten, and Dr. Warde B. Allan of Baltimore, Md., to succeed Dr. F. D. Murphy of Lawrence, Kans.

For the council on medical service, Dr. Robert L. Novy of Detroit, Mich., was reelected, and Dr. Hoyt Woolley of Idaho Falls, Idaho, was chosen to replace Dr. McKeown. Dr. Warren W. Furey of Chicago was re-elected to the council on constitution and by-laws.

The house of delegates voted the 1957 Distinguished Service Award of the American Medical Association to Dr. Tom Douglas Spies, head of the department of nutrition and metabolism at Northwestern University Medical School, Chicago, and director of the nutrition clinic at Hillman Hospital, Birmingham, Ala., for his out-

standing contributions to the science of human nutrition. For only the third time in AMA history, the house also voted a special citation to a layman for outstanding service in advancing the ideals of medicine and contributing to the public welfare. Recipient of this award was Henry Viscardi Jr. of West Hempstead, N. Y., founder and president of Abilities, Inc., which employs only severely disabled persons.

Physician registration at the New York meeting had already reached an all-time high at 5 p.m. Thursday with 18,982 counted and scores of registration cards still unprocessed. The previous high was chalked up at the 1953 New York meeting when the five-day total was 17,958 physicians.

Your President, Dr. Carlos Craig, your executive secretary, Mr. Robert Carpenter, and your delegate attended all of the meetings of the house. The delegate was assigned by the speaker to the reference committee on sections and section work.

Respectfully submitted,

JESSE D. HAMER, M.D.

Delegate to the AMA and Vice President
Phoenix, Arizona

June 10, 1957

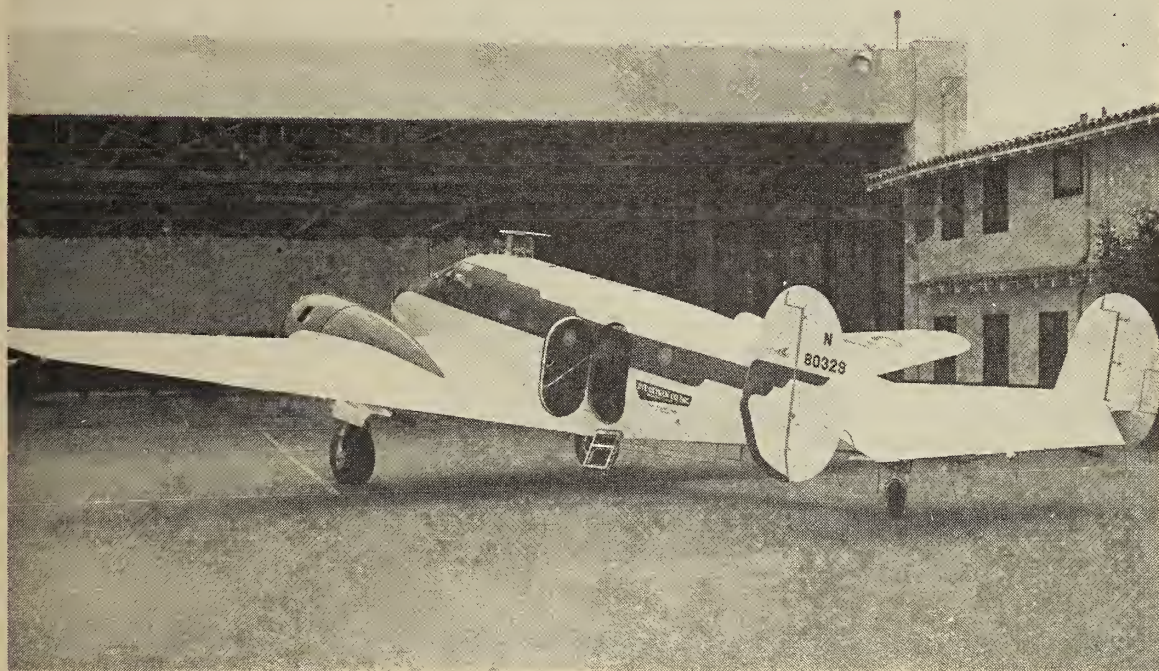
A.M.A. MEMBERSHIP SHOWS INCREASE

AMA membership reached 164,128, highest in history, as of last April 30.

Robert Enlow, head of the AMA membership department, explained that the increase in the AMA service membership probably resulted from changes in the constitution and by-laws admitting members of the reserve components, rather than from any substantial increase in the number of physicians entering the government services and the armed forces.

A breakdown of the membership figures follows:

| <i>Kind of Member</i> | <i>AMA Membership</i> | | |
|-----------------------|-----------------------|-----------|-----------|
| | Apr. 1956 | Dec. 1956 | Apr. 1957 |
| Dues Paying | 132,341 | 134,307 | 136,381 |
| Dues Exempt | 11,200 | 10,554 | 9,817 |
| (Tot. Active) | (143,541) | (144,861) | (146,198) |
| Associate | 5,892 | 6,095 | 5,856 |
| Service | 8,649 | 9,660 | 11,713 |
| Affiliate | 269 | 279 | 273 |
| Honorary | 94 | 93 | 88 |
| Total | 158,445 | 160,988 | 164,128 |



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ARIZONA POISON CONTROL CENTER

NEW NOTES IN POISON CONTROL

TWO new reports on snake bite treatment appear to be timely. They deal with the physiological and the mechanical principles, respectively:

1. A University of Miami School of Medicine research team reports that the survival rate of experimental animals given rattlesnake venom systematically was raised from 17 per cent to 75 per cent, empirically, by injections of hydrocortisone. (*Dr. W. E. McDonald Jr., Coral Gables, Florida*).

2. A United States Navy medical research group, evaluating the usually recommended mechanical treatments of snake bite cases, used 84 rabbits injected with *Crotalus* venom (approx. 4 mg/kg body wt.) and treated in four ways: immobilization; immobilization and tourniquet; immobilization with incision and suction; and simple return to cage. Results indicate that rabbits live longest when immobilization with or without tourniquet is used. The use of incision and suction is contradicted. (*Military Medicine*, v. 120, no. 6, June '57).

The picnic outing season has increased greatly the use of "canned cold" preparations which are frozen in the refrigerator and packed in the lunch basket to aid in the preservation of foods. Solutions of the salts of tri-valent metals (such as aluminum chloride) are sometimes employed in these containers in concentrations which could cause some stomach upset in the event of spillage over absorbent type foodstuffs (bread, etc.) following puncture of the container and melting of the contents. One such product, Frigee Freeze, contains starch and other harmless ingredients preserved with .1 per cent formaldehyde and, although distasteful, would not likely be harmful.

JULY 1, 1957 PROGRESS REPORT OF THE POISON CONTROL INFORMATION CENTER AT THE UNIVERSITY OF ARIZONA COLLEGE OF PHARMACY

SERVICES at the Information Center began officially on July 1. However, poisoning case reports were received and the first phases of the "Westernization" of the Florida nucleus file were conducted throughout June.

Forty-three case reports have been received

from Arizona physicians and are summarized by the following statistics:

Age:

- 63% involve under 5 year age group
- 5% involve 6 to 15 year age group
- 15% involve 16 to 30 year age group
- 9% involve 31 to 45 year age group
- 8% involve over 45 year age group

Nature of incident:

- 91 per cent accidental and 9 per cent intentional

Outcome:

- 98 per cent recoveries and 2 per cent fatalities

Time of day:

- 25% occurred between 6 a.m. and noon
- 50% occurred between noon and 6 p.m.
- 25% occurred between 6 p.m. and midnight
- None occurred between midnight and 6 a.m.

Causative Agent:

- 16% by aspirin preparations
- 14% by sedative preparations
- 14% by solvents including kerosene, etc.
- 12% by dog bites
- 7% by insecticides
- 7% by household wax preparations
- 4% by tranquilizer drugs
- 26% by miscellaneous group including bleaches, narcotic medications, disinfectants, cathartics, cosmetics, scorpions and gila monsters.

In view of the high incidence of reports on aspirin, kerosene and sedatives, the following treatments for these poisonings are quoted from the Information Center files:

Aspirin:

1. Pending gastric lavage, delay gastric absorption by the use of an emetic or by swallowing milk or a slurry of the "universal antidote."
2. Gastric lavage with water or sodium bicarbonate solution (3 to 5 per cent).
3. Saline catharsis with sodium or magnesium sulfate.
4. Alkali therapy in the presence of an acidosis determined by blood sample.
5. Correct hypoglycemia and dehydration to support renal function.
6. Small doses of barbiturates or other sedative (not morphine) for restlessness and convulsions.
7. Hemodialysis by means of an artificial kidney.
8. Large doses of vitamin K for hemorrhage.
9. In last stages of CNS depression, stimulants such as caffeine and nikethamide may be beneficial.

Sedatives —

1. Gastric lavage with potassium permanganate 1:5,000.
2. Saline cathartic, 15 to 30 grams, to be left in the stomach.
3. If stimuli such as pinching arouse the patient even briefly from the coma, and if respirations are full and regular, further treatment is seldom required.
4. Correct any airway obstruction.
5. Oxygen therapy is warranted at the slightest suspicion of hypoxia.
6. Analeptic drugs such as caffeine only if a clear and compelling need exists.
7. Correct dehydration by cautious administration of replacement fluids. Catheterize the urinary bladder to prevent retention.

Kerosene (solvents in general) —

1. Emetics are contra-indicated. Cautious gastric lavage with copious amounts of water or a weak solution of sodium bicarbonate (3 per cent). After lavage, instil 30 to 60 ml. of mineral oil in the stomach as well as using saline cathartics.
2. If CNS depression is prominent, nikethamide or caffeine may be employed parenterally.
3. Parenteral antibiotic therapy as a prophylactic measure against bacterial invasion of the lungs.
4. Positive pressure oxygen therapy as supportive treatment for pulmonary edema.
5. Avoid epinephrine, digestible fats, oils, and alcohol.

HEART STUDY CENTER

A HEART CENTER for special studies has been established at St. Luke's Hospital, Phoenix. This has been made possible by splendid co-operation between the board of directors of the hospital and the Greater Arizona Heart Association. This co-operation has been both organizational and financial. The center continues and enlarges on facilities that have been available at the hospital during the past two years. The facilities and service function around cardiac catheterization and angiocardiology, but wider applications are planned for the future. The center is not intended at this time to serve as a general consultation service in heart disease. Limitations in personnel and funds preclude such a service. Besides which, it is felt that there are adequate facilities in Maricopa County for the usual cardiac consultation which

requires apparatus that is available in the internist's office. For those unable to pay the usual consultation fee, there are clinics they may attend. In addition, it is well known that physicians in general will modify their office fee in cases of financial hardship.

At the present time, cardiac catheterization and angiocardiology are helpful and often essential in cases of congenital and rheumatic heart disease where the exact nature of the defect is not established clinically and/or a prediction as to whether the abnormality is surgically remediable cannot be made with reasonable precision. Important too is an assessment of the contributions to the circulatory disability of the mechanical defect as against myocardial dysfunction, although this is not always possible even with the most modern methods of investigation.

It is obvious that the suitability of a case for special study can only be determined by a physician specially versed in cardiology. To this end, and because the special studies in each individual case take a great deal of skilled technical and professional time (the latter, incidentally, is provided gratuitously), patients are accepted by the center only by referral from physicians known to be versed in the possibilities and limitations of the special studies. In general, this means referral by one oriented to cardiology. With only this limitation, cases are accepted for consideration by the physicians of the heart center who will further evaluate the likelihood that the special studies will contribute materially to the welfare of the individual patient. There is no geographic limitation.

While the heart center will not operate as a treatment center, the surgical facilities at St. Luke's Hospital have benefited from the generosity of the Arizona Heart Association with matching federal funds. These funds have been used to establish an adequate armamentarium for cardiac surgery. It is anticipated that within a reasonable period of time, in addition to the surgical procedures on the heart that already are being performed in the Valley by experienced and specially trained surgeons, all procedures beyond the purely experimental will be possible.

It will be apparent that the new facilities will not be useful to the majority of cardiac patients at the present time. However, they are essential if successful surgery is to be carried out in cer-

tain types of heart disease. Furthermore, it seems likely that since cardiac surgery is ever and rapidly increasing its scope, the day is fast approaching when wider use will be made of the apparatus. At that time, thanks to the generosity of all concerned, the limitation will not be apparatus and funds, but personnel, both technical and professional. A thoroughly experienced team both professional and technical, is the sine qua non of the new heart center, providing that funds continue to be made available for its operation and for the continued modernization of diagnostic and surgical apparatus.

The modus operandi of the heart center has been made as simple as possible. Application should be made direct to the secretary of the heart center at St. Luke's Hospital by the referring physician. A fee schedule has been set up which should be within the means of the average patient, but modifications will be made in cases of financial hardship. A preliminary work-up in the hospital is required unless one has been accomplished and is, in the opinion of the heart center team, adequate and complete.

INDIGENCY AMONG DOCTORS

By Beverly C. Smith, M. D.

New York City

(President, Physicians' Home)

ADMINISTRATION of the Physicians' Home for the past 12 years has revealed existing financial conditions among doctors and their widows that neither doctors at large nor the laity realize exists. It seems appropriate that if help is to be obtained, the members of the Medical Society of the State of New York should be acquainted with some of the experiences of the board of directors of the Physicians' Home.

Organized and incorporated under the charity laws of the State of New York in 1919 to care for indigent doctors, their wives, widows, and dependent children, the Physicians' Home has functioned continuously and has grown in size, scope, and usefulness. Its affairs are administered by an executive committee, a board of directors of 27, and five trustees. It employs the Hanover Bank as its financial advisor and Price-Waterhouse as auditors. The board of directors meets monthly eight times during the year. The executive committee meets monthly and, when the board is in recess, has power to act for the board of directors. Income is de-

rived from annual membership dues of \$10 from members of the Medical Society of the State of New York, voluntary contributions of \$2 solicited from state society members when a bill for dues of the county societies is sent, contributions from women's auxiliaries, voluntary contributions from individuals, and bequests. It is our policy to use income from contributions to care for guests and administrative costs, while bequests are placed in an endowment fund income from which is also used in the care of guests. The expenses of administration include the cost of publicity and appeals, accounting, custody accounts, legal fees, social service, and part-time secretarial help. Heretofore the Home's office has been domiciled, rent (and light) free, in the office of either the secretary or the president, but requests for aid have so increased of late that the board of directors has now obtained space in the office of the state medical society and has acquired necessary executive help for its increasing administrative problems.

REQUESTS GROW

Requests for financial assistance reached such proportions that the board of directors agreed that a letter be sent out in December 1954, asking each member of the state society to become a \$10 contributing annual member. A total of 23,200 such letters were sent out, and we received \$10,404 from 1,087 doctors, approximately 4.66 per cent of the number solicited. In December 1955, a similar letter was sent, and our response was \$14,358.50 from 1,528 members, or approximately 5.5 per cent of the total state society membership. A similar appeal was made in December 1956. If 50 per cent of the 23,200 members of the state society became contributing members, for a tax-deductible contribution of \$10, our income from this source of approximately \$120,000 would enable us to give more to more guests and perhaps help to care for them when they need nursing home or hospital care.

Since our incorporation in 1919 (38 years) we have had more than 93 guests. Of these, 30 were widows, three women doctors, and 60 were male doctors. Our guests have come from many of the 61 counties of the state. Applicants are usually in the older age group of 60 to 90. Naturally most are afflicted with partially incapacitating geriatric pathology. We simply have never had sufficient funds to accept the cost of nursing home and hospital care. When such

situations have arisen, we have been able to assume only a part of the cost, an amount equal to that which we sent the particular guest each month before his custodial care began. We are desirous of being more helpful in such cases and can do so only if we have increased revenue.

NO SOLICITATIONS

We have never solicited funds outside of the membership of the Medical Society of the State of New York. The board of directors has opposed the policy of public solicitation. From time to time we have received bequests (from individuals) which we have placed in an endowment fund administered by the trustees with the financial advice of the Hanover Bank. The income from this fund is used to supplement our other income which is used for the care of guests. To handle the many legal problems which would naturally arise in the affairs of such an organization, we regularly employ a legal counsel who has given generously of his time and efforts for a nominal monthly fee. I must say that we could not function without the most generous and helpful advice we have received from our counsel, Mr. J. Miller Walker, a relative of one of the founder group. To my present knowledge, similar organizations function only in Massachusetts and Pennsylvania, and their budgets are considerably smaller than ours in New York State. We have increased our appropriations for these purposes in each succeeding year. During our fiscal year, Oct. 1, 1954, to Sept. 30, 1955, we gave to 34 guests \$39,295.

It was recently brought out in testimony before a congressional subcommittee of the senate committee on labor that 12.5 million workers were covered by private pension systems 28,762,000 workers were covered by group life insurance plans, and there were 68,241,000 workers or dependents under hospitalization plans at the end of 1954. At the same time, there were 800,000 retired workers drawing benefits from private firms, and with their wives this total was 1.2 million persons (U. S. News & World Report, April 27, 1956, page 132).

TIMES CHANGE

The practice of medicine has changed along with the changing times. The cost of a medical education has increased. Periods of internships, residencies, and qualifications for specialty board certification have likewise lengthened. Many medical students have had part or the

whole of their educational expenses defrayed by the military services and on graduation or shortly thereafter have entered the services where they received compensation. This amount of compensation at the time — their first earned money — seems large, so much so that many have had a sense of financial security that has led them, earlier than usual after graduation, into matrimonial responsibilities. The natural sequences of a family and eventual separation from the services are followed by a search for residency and specialty training. Remuneration on a small scale is then received for two or more years. During this time, financial responsibilities with a growing family have increased. Having attained the training sought, usually at the approximate age of 30 to 35, the young doctor proceeds to look for a place to practice. Many enter clinic groups on a salary basis, but those who establish independent practices must finance a home, an office, and transportation facilities and must maintain a social environment in keeping with their dignity and probable advancement. Frequently, savings have been inadequate for these purposes, which necessitates borrowing. If serious illness in his family, i.e., his wife or children, parents, or dependent family collaterals, has occurred, savings will have been depleted, or additional borrowing will have been necessary. This may seem a somewhat dismal story, but it is often a true one, and it is to their eternal credit that young doctors so often face these situations with extraordinary courage and fortitude. However, how soon can one under somewhat similar circumstances begin to save to meet further responsibilities and prepare for the future, be it what it may? The time to save is early. Insurance is cheaper, and in youth more chances can be taken, for the long future holds more opportunities to right bad judgment or unforeseeable misfortunes.

MERRY-GO-ROUND

The doctor in many instances lives beyond his means. It seems that this is thought to be a necessary chance to enhance his social status which will return to him subsequent financial gain which seems worth the chance. A professional man's income is exaggerated by the laity. His expenses are overlooked. His financial security in old age is not considered important enough to discuss. He is expected to contribute to all charities and keep socially and physically fit. Once his earning capacity is established, he

is besieged by taxes. No matter how necessary they are, they are often financially crippling and will always be with him. As a doctor advances into his most productive years, for a period of 10 to 15 years his expenses, taxes, and family responsibilities increase. Unless he has intelligently approached the problem of systematic, regular saving and has established this principal as a jealously guarded habit, he may well be starting on a path of eventual financial insecurity, a sad road from which there is seldom self-rescue. Inability to live on an accustomed financial level invites isolation with deterioration of interests. It is very surprising how savings disappear when one has not anticipated meeting unusual financial responsibilities. The doctor is notoriously easy to approach by those who have something to sell. A quick and unusual return in the investment field is an enticing object when dangled before a hard-working, self-sacrificing medical person. A policy of gradual saving and sound investment at a lower return with an avowed purpose to allow accumulation is slower and often is a policy of personal deprivation which is not attractive unless one is dedicated to it — and one which the busy doctor has not and will not take time to comprehend.

When the ages of 40 and 50 are reached parental or collateral family responsibilities may suddenly loom large and financially devastating.

CLOUDED FUTURE

Preoccupation with professional advancement is a consuming element in a doctor's life; vital as it is, it may well cloud the vision necessary to foresee and establish the future. Then comes the period of release from professional appointments, decreased professional activity, and a less avid interest in advancement — a sort of dulling of the instinct of competition — the invasion by competing younger doctors, the plateau from which the vista of life is less glamorous, and on looking backward things which might have been seem more poignant. The procession, if one survives sufficiently long, leads into further decreased activity and geriatric pathology. The cost of medical care today is stupendous, and there are no obvious signs that it will decrease.

Time and again these and similar situations of varying degrees have crossed the desks of those who have processed applications for beneficiary aid from the Physicians' Home. Tragedy — stark tragedy — tragedy of despair, no domi-

cile, or a meager one in an undesirable neighborhood, an empty larder, and clothes too few and tattered to make a respectable appearance, a withdrawal from environment of former associates, a disposal of personal belongings—even furniture, a proud and genteel poverty, a broken spirit, a stone wall, no known means of help or appeal, a state of prayer and bewildering hope — this is the group with whom, as president of the Physicians' Home, I have corresponded and been in contact. If their qualifications for beneficiary aid fall within our by-laws, we have accepted them as "guests," and instead of shepherding them into a home with segregation and regimentation, we send them a monthly check and allow them to live where and with whom they please. This check is sent monthly and continues unless their financial situation betters and they do not need it. In the event of death and the inability of the family and friends to finance it, we contribute toward a place of burial and decent funeral, otherwise only a public burial place would be available.

FAMILIAR SCENE BEST

Twice we have tried to run an organized home. It was very expensive. Very few wanted to enter it, and those who did were unhappy and disintegrated rapidly. Elderly doctors and their wives and widows seem to prefer to stay in the community in which they have worked all of their professional lives. There they have friends, old patients, and the most interests. It is true that even those in large cities desire to terminate their lives there rather than in an unfamiliar and strange countryside. A doctor prefers his own library, his chair, his bed, books, and other associations of his home to those of a more formal institution.

When our guests become incapacitated from cerebral, visual, auditory, pulmonary, cardiac, renal, and joint pathology, there is seldom adequate help in their homes to make them comfortable. They must be moved into a nursing home. This is expensive, and often the care is mediocre. Here is where the Physicians' Home is handicapped in helping guests. We simply do not have the funds on hand to pay from \$400 to \$500 a month for this care. The next problem is the difficulty of getting and keeping these doctors or their widows in hospitals. Occasionally, a hospital will place one of our guests in a free or endowed bed, but more often the patient is billed by the hospital with very little

or no reduction in its rates. Again, we cannot help to the extent we would like. The next alternative is a city, state or county institution. It is absolutely heart-rending to a family to face this situation. The usual attempt to circumvent this practical solution often ends in total financial and social disruption of a family.

The young, busy doctor says that this will never happen to him. He just does not know of the number of doctors of distinction to whom these things have happened. It has been our privilege to be able to care for very distinguished colleagues who in their active years were regarded as singularly financially successful by their colleagues. Misfortune has occurred to them, and from experience I should say it may happen to any one of us. I recently asked a member of our board of directors to call upon and ascertain the financial status of a distinguished practitioner who had held high offices and contributed the better part of his life in a tangible fashion to advancement of all phases of medicine. The director's report was to the effect that the interview was most depressing. He had known this doctor through the years of his success, admired his interest and contribution to all phases of administrative and formal medical practices, and had never dreamed he could be reduced to the object of poverty and pity that he had become.

NONE ARE IMMUNE

Again, this can happen to any of us. The pangs of poverty are not only depressing but seem to poison one's resistance to misfortune and, in the aged, dull the ambition to attempt rectification. These reactions may be as yet an unexplained endocrine physiologic reaction in which the reaction to stimuli of stress are altered by a psychiatric attitude and the lack of normal response in atrophic geriatric tissues. The antidote of a superior psychosomatic attitude seems lacking. The result is remorse, frustration, and futility.

These are as psychologically crushing as they are harbingers of terminal social failure. Poverty breeds anxiety which, when continued, depresses the responses of the body to stress situations and produces abnormally deficient responses which in earlier years can be met more courageously.

Again, the psychology of a physically isolated, regimented home for aged professional persons

is influenced by the impact of enforced illness and aimless existence. This is an abnormal physical and mental state to those who have been accustomed to a state of high previous professional activity. It depresses the mind and stupifies the normal processes of resistance, eventuating in an abnormal syndrome of mental disintegration and physical dissolution.

Thus, in conclusion, we may say that indigency among doctors, their wives, and widows exists in probably a greater degree than either doctors or the public realize. Because of pride it becomes known in the individual case only when it is ferreted out. Its public display is embarrassing and degrading. In a meager way the Physicians' Home has tried to help to alleviate conditions as we have found them. Doubtless more of this state exists than we know. Medicine is a proud and independent craft. We are proud to care for our own less fortunate colleagues. I hope a part of this problem has been so displayed as to arouse an active interest in preventing it.

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WE GUARANTEE TO THE DOCTOR AND HIS PATIENT

CANCER

A MERICAN Cancer Society scientists have reported that final figures on the smoking habits of 188,000 men 50 to 70 years old — 11,870 of them now dead — and their fate over a 44-month period confirm and broaden earlier interim findings.

The study, originally designed to determine whether or not there is an association between lung cancer and cigaret smoking, showed that there is a spectacular relationship between the habit and lung cancer. Moreover, it is indicated a clear-cut association between cigaret smoking and several other conditions, notably coronary artery disease, the Number One killer.

Dr. E. Cuyler Hammond, director, and Dr. Daniel Horn, assistant director of the society's statistical research, told the annual meeting of the American Medical Association that the massive, long-term study has shown that

(1) *Death rates from all causes combined* rise with the number of cigarets smoked daily — as compared with those who have never smoked, 34 per cent higher for those who smoke up to half a pack a day; 70 per cent higher for half-to-one pack a day; 96 per cent higher for one-to-two packs a day; and 123 per cent higher for two or more packs a day.

(2) *Quitting smoking* lowers the risk of death — men who had given up light smoking for more than 10 years enjoyed almost the low mortality of non-smokers; men who had given up light smoking from one to 10 years earlier had a death rate only 30 per cent higher than non-smokers as compared with 61 per cent for those who continued to smoke; those who had quit smoking a pack or more a day 10 or more years earlier died at a rate 50 per cent higher than those who never smoked, but those who continued to smoke had double the death rate of those who never had smoked.

(3) *Coronary artery disease* accounted for 52.1 per cent of all (2,665) "excess" deaths among men with a history of regular cigaret smoking; and other heart and circulatory diseases added another 5.8 per cent. Of the 11,870 deaths, 5,297 were ascribed to coronary artery disease. A total of 3,361 coronary victims had smoked cigarets regularly at one time or another — 1,388 more deaths (and a rate 70 per cent higher) than would be expected among non-smokers. As compared with the rates for

non-smokers, coronary death rates among less than half-a-pack-a-day smokers were excessive by 29 per cent, among half-to-one pack smokers 89 per cent, among one-to-two pack smokers 115 per cent, and among two-or-more-pack smokers 141 per cent.

(4) *Lung cancer* death rates were 1,000 per cent (10 times) higher among regular cigaret smokers than among men who never had smoked and accounted for 13.5 per cent of all excess deaths among men with a history of regular cigaret smoking. (57 per cent of all the men studied had a history of cigaret smoking.) Ex-smokers had less than one-half the lung cancer risk of those who continued to smoke. Considering only the cases which were proved microscopically and beyond reasonable doubt to be primary lung cancer, the death rate for those who smoked two or more packs a day was 64 times that of non-smokers. In the entire study, only four non-smokers were shown, by microscopic examination, to have died of primary lung cancer.

(5) *Lung cancer* death rates, standardized for smoking habits and age, were 25 per cent lower in rural than urban areas — a fact which suggests either better diagnosis in the cities, or the existence of urban cancer-causing agents besides those in cigarets. In both rural and urban areas, however, lung cancer rates were low among non-smokers and high among smokers.

(6) Deaths ascribed to *lung diseases other than cancer* were three times as high among cigaret smokers as among non-smokers — among cigaret smokers, death from pneumonia and influenza was almost four times the non-smokers' rate.

(7) *Other cancers* bringing elevated death rates to smokers included those of the esophagus, larynx, mouth, tongue and back of throat. To these, cigaret smokers were seven times as susceptible as non-smokers.

(8) Death rates were virtually the same for smokers and non-smokers in such categories as accidents, violence, suicide, chronic rheumatic fever, hypertensive heart disease, other hypertensive diseases, nephritis and nephrosis, diabetes, leukemia and cancers of the rectum, colon and brain.

(9) Every single one of the 51 who died of *stomach ulcer* had been a smoker — 46 of cigarets, two of pipes, two of cigars and one of both

pipes and cigars.

(10) *Overall death rates* among pipe smokers were 12 per cent, and among cigar smokers 22 per cent higher than those for non-smokers — as compared with 68 per cent more among cigaret smokers. Pipe smokers were somewhat more susceptible to lung cancer than non-smokers were.

Of the 11,870 who died, 4,406 had smoked cigaret regularly, but not cigars or pipes. If they had the death rate of non-smokers, only 2,623 would have died during the study.

Less than 1 per cent of these who had not smoked when the study began in 1952 later became regular cigaret smokers. Of those who had quit cigaret smoking before the start of the study, 7.2 per cent were regular smokers again at the end of the study. Of those who had "cut down" at the beginning of the study, 26.4 per cent again had become regular cigaret smokers at the end.

The figures showed that light smokers quit the habit or cut down much more than heavy smokers did. Former smokers who reported at the end of the study that they no longer were smoking regularly included 36.2 per cent of the less than half-a-pack-a-day smokers, 21.6 per cent of the half-to-1 pack smokers, and 13.8 per cent of the pack or more smokers. Of the regular smokers at the end of study, 28 per cent reported using filter tips.

About 20,000 volunteer workers in 394 counties of nine states (New York, New Jersey, Pennsylvania, Michigan, Illinois, Wisconsin, Minnesota, Iowa and California) enlisted in this study in November 1951. Each agreed to visit 10 apparently healthy white men between the ages of 50 and 70 years and have them describe on questionnaires their smoking habits and histories. Periodically, the volunteers checked their men and advised the society as to the status of each — living or dead. The last check was begun in November 1955.

The study was occasioned by the enormous rise in deaths from lung cancer during the 20th century. The number of deaths in the United States has doubled with every decade. This year 31,000 will die of the disease, 26,000 of them men.

Further data and interpretations will be given in future papers.

BLOOD TESTS IN MENTAL ILLNESS

A NEW BOOK on blood tests in mental illness has been published by the Brain Research Foundation. Dr. Ladislav J. Meduna is president of the foundation and professor of psychiatry at the University of Illinois College of Medicine, Chicago.

Dr. Stig Akerfeldt, young biochemist from the Nobel Institute, Stockholm, Sweden, is the leading contributor to the new volume, which includes papers and discussions presented at the annual scientific conference of the Brain Research Foundation.

Dr. Akerfeldt's six-minute blood test for schizophrenia, the most prevalent mental illness, now is under investigation in dozens of laboratories throughout the world, Dr. Meduna said. Dr. Akerfeldt was brought to the United States earlier this year by the Brain Research Foundation to present his important new discovery to American scientists. He also appeared before the American Psychiatric Association to discuss his findings. The details of Dr. Akerfeldt's work are in the new book.

"Akerfeldt's discovery must be hailed as an important breakthrough toward finding the cause and cure of mental illness," Dr. Meduna said. "As scientists make further investigations of his test, with modifications and refinements that must always be expected when a new scientific procedure is introduced, we can look forward to getting new and practical tools for the diagnosis of mental illness."

"The even greater significance of Akerfeldt's work and that of others who are following up on it," Dr. Meduna continued, "is the indication that the majority of mental illnesses are definitely associated with detectable chemical changes in the brain. If these chemical upsets can be identified, we stand a good chance of being able to cure and possibly prevent mental illness by chemical means — that is, with drugs."

Dr. Leo Abood, of the division of psychiatry of the University of Illinois College of Medicine, is one of the American scientists who has confirmed Dr. Akerfeldt's original work. His findings are also included in the new book, along with discussion and comments from 16 leading biochemists and psychiatrists from the United States and Europe.

The publication of "Blood Tests in Mental Illness" is only one of many steps now being

taken by the Brain Research Foundation to stimulate and encourage further basic research concerning brain disorders and brain-related diseases.

"Nowhere in the world," Dr. Meduna stated, "is there a center where every type of brain disorder can be studied, diagnosed and treated. That is why the Brain Research Foundation has developed sound plans for establishing a brain institute. This pioneering institution, staffed and equipped for intense and specialized study of brain disorders, will be a model for a number of such centers throughout the nation. In spite of its importance to the human being, we still know pitifully little about the brain and its disorders. A co-ordinated approach to brain research and the treatment of brain disorders is a vital and primary objective which the Brain Research Foundation has taken upon itself."

Established in 1953, the Brain Research Foundation is a nationwide, nonprofit, voluntary organization of doctors and laymen interested in meeting the challenge of brain disorders. Offices are at 600 South Michigan Avenue, Chicago 5, Ill.

PIMA COUNTY MEDICAL SOCIETY

OFFICERS

June 11, 1957 to June 10, 1958

President, O. J. Farness; President-Elect, Frederick J. Lesemann; Vice President, Darwin W. Neubauer; Secretary-Treasurer, D. J. Heim.

Board of Censors, H. D. Cogswell, Chairman, David E. Engle, Lindsay E. Beaton, George Fraser, and S. J. Grauman.

Pima County Hospital Medical Advisory Board, M. A. Carreras, E. L. Kettenbach, Ian M. Chesser, Phillip Derickson, E. W. Czerny, J. R. Schwartzmann, H. D. Cochran, J. E. O'Hare.

Delegates, Clarence L. Robbins, Stuart Sanger, W. R. Hewitt, William A. Butcher, Ian M. Chesser, Wesley S. Fee, Herbert D. Welsh, Juan E. Fonseca, E. R. Updegraff, Donald N. McLeod, Jack Demlow, Frederick J. Lesemann.

Alternate Delegates, Martin S. Withers, Kenneth C. Baker, Earl R. Baldwin, Hermann S. Rhu, Robert B. Johnson, James E. O'Hare, Blair W. Saylor, L. D. Sprague, Robert W. Weber, Sherwood P. Burr, Roland V. Murphy, S. I. Shapiro.

LOCATION OPPORTUNITIES

ASHFORK — Pop. 700 — North centrally located — Railroad center — Contact the Women's Club, Ashfork, Arizona.

BENSON — Excellent opportunity for GP — This David-Benson trade area has about 5,000 population with only one doctor available. A small sleep-in hospital can be set up very easily. Chamber of commerce will furnish telephone answering service, nine to five. Contact Ber-

nard Fisher, D.D.S., Medical Committee of the Chamber of commerce, Benson, Arizona.

CAMP VERDE — Located in the heart of a large farming and ranching area on the Verde River. Approximately 100 miles north of Phoenix. Badly in need of a medical doctor. Contact Ivy N. Moser, R. N., Camp Verde, Arizona.

FLAGSTAFF — Pop. 17,500 — Largest city in the north central Arizona trading area. One pediatrician is needed (as there are a number of general practitioners who would gladly refer work to him). Excellent opportunity for an eye, ear, nose, and throat doctor. Contact C. Herbert Fredell, M.D., Secretary, Coconino County Medical Society, 121 East Aspen Ave., Flagstaff, Arizona.

GILA BEND — Pop. 2,500 — 80 miles west of Phoenix — Nearest town to the Painted Rock Dam Project — Good opportunity for general practitioner. Cattle, cotton and general farming. Office and equipment available. \$150 monthly income from board of supervisors. Contact Mrs. J. F. Allison, Box 485, Gila Bend, Arizona.

HAYDEN — Pop. 4,000. Located in southern Arizona. Need for a general practitioner. Have only one doctor available now. Mostly industrial area. Has a local clinic — with Ray hospital 24 miles away. Contact Mr. A. J. Harriman, Kennecott Copper Company, Haden, Arizona.

LAS CRUCES, N. M. — In south central part of state and not too distant from El Paso, Texas. Population is approximately 22,000, boasts state college and White Sands proving grounds. General hospital, 85 beds, fully accredited and staffed by 14 doctors. Need urologist, anesthesiologist, and obstetrician-gynecologist. For full details write A. M. Babey, M.D., President of the Staff, 250 West Court St., Las Cruces, N. M.

MORENCI — Mining community located near New Mexico-Arizona border — Pop. 10,000. Has vacancy at hospital for GP. Contact Carl. H. Gans, M.D., Morenci Hospital, Morenci, Arizona.

PAYSON — Pop. 1,800 — Have completed and equipped a new clinic. Are badly in need of a medical doctor and the closest medical facilities are 80 miles away. For further information contact Mr. Walter Surrent, President, Payson Clinic, Payson, Arizona.

TUCSON — The VA Hospital has two vacancies at the present time — one is for an internist on the medical service and the other is for either a general or thoracic surgeon on the surgical service. State license is necessary, but not

necessarily an Arizona license. Contact S. Netzer, M.D., Director, Professional Service, VA Hospital, Tucson, Arizona.

YOUNGTOWN — Pop. 130 — Located 16 miles from Phoenix, four miles from Peoria, 1½ miles from El Mirage, 1 mile from Surprise, each a potential field of practice. Most residents are 60 years of age or older and are in need of medical care. Office space is currently provided at no rental. A medical center is being planned. Interested doctors may contact Mr. Sid Lambert, Box 61, Marionette, Arizona.

YUMA — Pop. 15,000 — Situated in the southwest corner of the state on the Colorado River — Semi-retired medical doctor, possibly a GP, may work part time or full time. He may do his own surgical procedures or may call upon local surgeons to do surgical procedures. If he would wish, he may be director of the Yuma County Health Unit which is an administrative position. Now paying \$6,600 annually for a permanent part time physician. However, it could be revised upward considerably if he would handle his own surgery and the health unit. If interested, contact Mr. R. L. Odom, P. O. Box 1112, Yuma, Arizona.

FOR INFORMATION ON OPPORTUNITIES IN THE FIELD OF INDUSTRIAL MEDICINE, CONTACT:

Harold J. Mills, M.D., Phelps Dodge Hospital, Ajo, Arizona.

Carl H. Gans, M.D., Phelps Dodge Hospital, Morenci, Arizona.

Ira E. Harris, M.D., Miami-Inspiration Hospital, Miami, Arizona.

Charles B. Huestis, M.D., Box 928, Hayden, Arizona.

Elvie B. Jolley, M.D., Copper Queen Hospital, Bisbee, Arizona.

H. W. Finke, M.D., Magma Copper Company Hospital, Superior, Arizona.

John Edmonds, M.D., Kennecott Copper Corporation Hospital, Ray, Arizona.

ADMINISTRATION HEALTH INSURANCE BILL FOR FEDERAL WORKERS INTRODUCED

AFTER months of study and reworking, the administration's bill for contributory health insurance for federal civilian employees and their dependents has been introduced in congress. Un-

like the 1956 version which was only for major medical coverage, the new bill provides both basic and major coverage. To get government contributions, workers would have to take both major and basic coverage. The Civil Service Commission estimates about 1.8 million workers would elect coverage at a projected cost to the government of \$64.5 million annually.

A summary of the two major phases of the bill:

Basic coverage — The government would pay one-third of the premium up to 50 cents bi-weekly if insured alone, or up to \$1.50 bi-weekly if dependents are to be included; the workers would pay the balance through payroll deductions. Each employee would be free to choose any locally available group plan meeting minimum standards set up in the law; the plan could range from minimum hospitalization to a comprehensive one covering also surgical services and medical expenses. The employee could continue coverage after retirement, but the government would no longer contribute to its cost.

Major coverage — U. S. contribution would be a flat one-third amounting to 12½ cents bi-weekly for single workers and 37½ cents for employees with dependents; the employee share bi-weekly would be either 25 cents or 75 cents, depending on dependents. The plan would pay 75 per cent of covered hospital expenses after 70 days of hospitalization, and 75 per cent of surgical and other medical costs in excess of \$100. Benefits payable would be limited to a lifetime maximum of \$10,000 and a calendar year maximum of \$5,000 for the insured or retired worker and each covered dependent. Coverage would be continued at no cost to the employee after reaching age 65 or upon retirement.

Other highlights: (1) the Civil Service Commission would establish local schedules of charges for surgical operations for various sections of the country, (2) included in covered medical costs would be doctor's fees for home, office and hospital visits; special nurses, drugs and medicines, ambulance service, costly appliances such as iron lungs; (3) the commission expects that basic health plans now offering less than 70 days hospitalization will very shortly increase their daily benefits to 70 at only a nominal cost increase in premiums. Apparently, insurance could be for full coverage or indemnity.

IF “ORIENTAL FLU”
SPREADS ACROSS
the UNITED STATES



■ If the Far East Flu spreads across the United States, it may lead to the worst epidemic since 1918. That is an opinion publicly expressed today by many leading physicians and health officers in this country.

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BLUE CROSS, BLUE SHIELD, AHA BACK U.S. EMPLOYEE HEALTH INSURANCE

IN a joint statement, Blue Shield Medical Care Plans, Blue Cross Association and American Hospital Association gave their official indorsement to the measure introduced by Rep. Chet Holifield (HR 7034) for a federal employee health insurance program. The associations make these major points:

1. The U. S. government, the nation's largest employer, is lagging behind other major private employers when it fails to provide a health insurance plan for its workers. The groups point out that they "have urged for several years that federal employees should have the opportunity to participate in health insurance programs on the same basis that employees of industry do

through group programs." 2. Basic coverage is an essential in any program, the groups believe, and the Holified plan provides this. However, the associations add that "we have agreed as well to the importance of providing extended coverage to apply against the expenses of complicated and long-ter millnesses," which is part of the Holified bill. 3. The Holifield bill provides payroll deductions, without which federal employees would not be able to qualify "for the best coverage offered." Up to this point the administration has resisted payroll deductions for U. S. employee health insurance, and it is not known whether this position has been changed.

CONFEREES AGREE ON HEALTH BUDGET: RESEARCH STILL UP

THE National Institutes of Health is getting about \$21 million more than the house allowed for the fiscal year starting July 1. This was agreed on after two meetings of senate and house conferees on the Department of Health, Education, and Welfare budget. The senate had voted \$32 million more than the house total of \$220 million for all NIH operations including lab facilities construction. But when the two

sides got together, they were able to pare down senate figures some \$11 million.

In another section of the budget, higher senate amounts for two public health service items remained untouched. These were grants to states for general health activities, and funds for communicable diseases. The following table lists final disposition of disputed items:

| <i>Agency</i> | <i>House Recommends</i> | <i>Senate Recommends</i> | <i>Conference Agreement</i> |
|--------------------------------|-----------------------------|------------------------------|---------------------------------|
| Assistance to states | \$19,592,000 | \$22,592,000 | \$22,592,000 |
| Indian health activities | 40,000,000 | 42,500,000 | 40,100,000 |
| National Cancer Institute | 46,902,000 | 58,543,000 | 56,402,000 |
| Mental health activities | 35,217,000 | 39,421,000 | 39,217,000 |
| National Heart Institute | 33,436,000 | 38,784,000 | 35,936,000 |
| Arthritis & metabolic diseases | 17,885,000 | 23,548,000 | 20,385,000 |
| Neurology & blindness | 18,887,000 | 24,058,000 | 21,387,000 |
| Water pollution control | 50,000,000 | 45,000,000 | 45,000,000 |
| Communicable diseases | 6,200,000 | 6,250,000 | 6,250,000 |

WHO ASSEMBLY ACCEPTS U.S. INVITATION FOR 1958

AS expected, the World Health Assembly, governing body of the World Health Organization, has accepted an invitation to hold its session in the U. S. next year, but no city has yet been selected. Action was taken by the assembly at its meeting in Geneva. The acceptance was received by Dr. Leroy E. Burney, surgeon general of U. S. Public Health Service, who heads

the U. S. delegation to Geneva. Last year congress extended the invitation, and authorized spending \$400,000 to cover additional costs of the meeting here, away from WHO's permanent headquarters in Geneva. The assembly also asked Dr. M. G. Candau of Brazil, WHO's director general, to serve another five-year term when his present term expired July 21, 1958.

HOLIFIELD COMMITTEE GETS CONFLICTING VIEWS ON FALLOUT DANGERS

CONFLICTING testimony on the effects of radiation fallout on man marked the joint atomic energy subcommittee hearings. Scientists disagreed on whether all fallout is harmful, with greater dangers from larger doses, or whether there is a permissible "threshold." But, geneticists concurred that any radiation exposure produces undesirable mutations in humans.

Edward Lewis, a California Institute of Technology biologist, said the incidence of leukemia varies in direct proportion to the dose of radiation received and insisted there can be no threshold for radiation damage. In agreement with this, Ernest C. Pollard, a Yale University biophysicist, suggested a policy of regarding all radiation with suspicion. Lauriston Taylor, chief of the National Bureau of Standards atomic and radiation physics division, insisted on the other hand that there was still "room for motion as far as our uses of radiation is concerned."

OTHER HEARING HIGHLIGHTS

1. Four geneticists — James F. Crow of University of Wisconsin, Bentley Glass of Johns Hopkins University, A. H. Sturtevant of the California Institute of Technology, and Nobel prize winner H. J. Muller of University of Indiana — told the Holifield committee that nuclear bomb tests already held have seriously injured hundreds of thousands of lives in future generations.

2. Dr. Muller urged the establishment of a "solid core" of geneticists in a proposed radiation health institute. Such an institute under the National Institutes of Health has been proposed by Senator Neuberger (D., Ore.) and others.

3. Atomic Energy Commissioner Willard Libby testified that bomb testing is a "small risk" that must be measured against the "risk of annihilation . . . if we surrendered the weapons." He said that scientists who have studied the data uniformly agree on the dangers and thresholds of radiation, despite contrary testimony received by the subcommittee.

ANTIDOTE TO RADIATION EXPOSURE

PARTIAL antidote to atomic radiation is claimed discovered by French AEC scientists. They

reported that rats dosed with resins (presumably of ion-exchange type) were protected largely against strontium-90, which showed little absorption into bone. Protection applied only to elements digested, not those absorbed through skin or lungs.

This news item appeared in the April 1957 issue of the *Industrial Research Newsletter* published by the ARMA Research Foundation of the Illinois Institute of Technology, Technology Center, Chicago 16, Ill. It was suggested in the news item that individuals desiring further details on this topic should contact the Business Atomic Publication, Inc., 1700 New York Ave., New York 28, N. Y.

LABOR HITS PHYSICIANS' FEE SYSTEM

Nelson H. Cruikshank, director of the AFL-CIO social security department, who had many a run-in with the AMA when he served as an active member of the board of directors of the Committee for the Nation's Health, shouted out recently against the practice of medicine on a fee-for-service basis.

Writing in the May 18 issue of the AFL-CIO News, Mr. Cruikshank said that physicians' attempts to maintain solo practice on a fee-for-service basis as the only proper relationship with their patients is pure "escapism." The story was based on a speech which he delivered before the Massachusetts Hospital Association.

He was quoted as saying:

"It will not work. Our problem is not as simple as how to maintain solo practice on a fee-for-service basis, or even as simple as how to destroy it.

"Our problem is how to develop arrangements under which the personal and social values which were associated with it can be preserved in the practice of 20th century medicine."

In discussing labor's interest in medical care, he said:

"The organizational and collective bargaining process must be extended into a new dimension through negotiations, agreements and arrangements with third parties — the providers of medical services and facilities. Only in this way can the job of translating health and welfare funds into better medical care be effectively accomplished."

VA TIGHTENS UP ON WORKMEN'S COMPENSATION CASES

VETERANS' Administration has tightened up its policy on hospitalization of non-service connected cases where the veteran is covered by workmen's compensation. The action follows conferences between representatives of the American Medical Association and officials of the VA and other federal agencies. The new policy applies only to treatment (on non-service connected basis) "of an occupational injury or disease incurred in or as the result of employment and (where the veterans are) entitled to necessary medical and hospital treatment elsewhere at no expense to themselves by reason of some form of industrial coverage. . . ."

Dr. Roy A. Wolford, deputy chief medical director for VA, instructs hospital managers to follow this procedure in such cases: 1. Once it has been established the veteran is covered by workmen's compensation, he will be asked to review his oath of "inability to pay" for private treatment and to agree to his transfer to another (non-VA) hospital when his condition permits. 2. If the veteran still refuses to change, he will be informed that this information will be transmitted to VA headquarters in Washington. (VA can refer such cases to the justice department for possible prosecution, although the directive does not say that this will be done.)

NATION'S OLDEST ESSAY CONTEST

THE trustees of America's oldest medical essay competition, the Caleb Fiske prize of the Rhode Island Medical Society, announce as the subject for this year's dissertation "*Hormonal Relationships In Breast and Prostatic Cancer — Their Practical Application.*" The dissertation must be typewritten, double spaced, and should not exceed 10,000 words. A cash prize of \$350 is offered. Essays must be submitted by Dec. 31, 1957.

For complete information regarding the regulations, write to the Secretary, Caleb Fiske Fund, Rhode Island Medical Society, 106 Francis St., Providence 3, R. I.

The Medical Association of the State of Illinois recently voted an allocation of \$20 per member to AMEF.

Future Meetings

RENO SURGICAL SOCIETY,
8TH ANNUAL CONFERENCE

Reno, Nev.

GUEST SPEAKERS

John B. Dillon, M. D., Professor of Surgery and Anesthesia, University of California Medical Center, Los Angeles:

"Spinal and Epidural Anesthesia"

"New Drugs"

Francis Murphey, M. D., Professor of Neurosurgery, University of Tennessee College of Medicine:

"Diagnosis and Treatment of Spontaneous Occlusion of the Carotid Artery"

"Ruptured Intervertebral Disc in the Cervical Region"

John W. Cline, M. D., Associate Clinical Professor of Surgery, Stanford University School of Medicine:

"Surgical Aspects of the Common Duct"

"The Significance and Treatment of Nodules of the Thyroid Gland"

Fred J. Hodges, M. D., Professor and Chairman of Radiology, University of Michigan:

"X-ray Detection of Colonic Cancer"

"Radiology's Debt to Surgery"

Carleton Mathewson Jr., M. D., Professor of Surgery, Stanford University School of Medicine:

"The Management of Penetrating Wounds of the Colon"

"Massive Hemorrhage from Gastroduodenal Ulceration"

K. Alvin Merendino, M. D., Professor of Surgery, University of Washington School of Medicine:

"Further Experiences with Jejunal Interposition Operation in the Treatment of Esophagitis, Cardiospasm, and other Diseases of the Esophagogastric Junction"

"The Life History and Treatment of Abdominal Aneurysms with Seamless Teflon Fabric"

E. G. Holmstrom, M. D., Professor and Head of Department of Obstetrics and Gynecology, University of Utah:

"Amenorrhea"

"Functional Uterine Bleeding"

Otto E. Aufranc, M. D., Assistant in Ortho-

pedic Surgery, Harvard Medical School and Massachusetts General Hospital:

"Reconstructive Surgery of the Hip using Prostheses and Cups and the Indications for Each"

"Surgical Treatment of Sepsis after Reconstructive Surgery of the Hip"

LUNCHEON SPEAKER, AUG. 22

Raymond I. Smith, Manager Harolds Club:

"Gambling As Seen Through the Eyes of a Professional Gambler"

BANQUET SPEAKER, AUG. 23

Tom Harmon, Sports Director, Columbia Pacific Network.

SOCIAL EVENTS

Pre-Meeting Cocktail Party, Wednesday Evening, Aug. 21 — Holiday Hotel.

Luncheon, Thursday Noon, Aug. 22 — Hotel Mapes.

Cocktail Party, Thursday Evening, Aug. 22 — Harolds Club.

Luncheon, Friday Noon, Aug. 23 — Hotel Mapes — Round Table Discussion.

Banquet, Friday Evening, Aug. 23 — Riverside Hotel.

UTAH STATE MEDICAL ASS'N.

62nd ANNUAL SCIENTIFIC MEETINGS

Sept. 5, 6, 7, 1957 — Salt Lake City

ENTERTAINMENT

Wednesday evening, Sept. 4:

Annual Dinner Meeting for stockholders of Medical Service Bureau. (Blue Shield).

6 p.m. — Social Hour — Crystal Ballroom — Hotel Newhouse.

7:30 p.m. — Dinner — Bonneville Room — Hotel Newhouse.

Thursday evening, Sept 5:

President's Reception — Alta Club — 5-7 p.m.

President's Banquet — Lafayette Ballroom — Hotel Utah, 7:15 p.m.

Featured Guest Speaker — Gunnar Gunderson, M.D., President-elect, American Medical Association.

Dancing — Junior Ballroom, Hotel Utah — (Informal).

Friday evening, Sept. 6:

Dinner meetings sponsored by the following societies with our guest speakers in attendance:

Intermountain Pediatric Society

Salt Lake Surgical Society

Utah Chapter American Academy of General Practice

Utah State Society of Anesthesiologists

Utah Society of Internal Medicine

Utah State Obstetrical and Gynecological Society

Special Luncheons — Hotel Utah

Panel discussions with local and guest speakers participating.

Thursday — Starlite Roof Garden — 12:10 p.m.

Friday — Empire Room — 12:10 p.m.

LADIES ENTERTAINMENT

Thursday, Sept. 5 — Hotel Utah

9 a.m. — Registration

9-10 a.m. — Hospitality hour

10 a.m. — Meeting — Welcome Stranger

1 p.m. — Luncheon — Ft. Douglas Club

Friday, Sept. 6:

10 a.m. — Brunch — Home of Mrs. Reed S.

Clegg

SEVENTH CONGRESS PAN-PACIFIC SURGICAL ASS'N.

The Seventh Congress of the Pan-Pacific Surgical Association to be held in Honolulu, Hawaii, Nov. 14-22, 1957. For information, write Dr. F. J. Pinkerton, Director-General of the Pan-Pacific Surgical Association, Suite 230, Young Building, Honolulu, T. H.

MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

The next meeting of this organization is to be held at the Pioneer Hotel, Tucson, Arizona, Dec. 5, 6, and 7, 1957.

ARIZONA MEDICAL ASSOCIATION MEETING, 1958

The 1958 meeting of the Arizona Medical Association is to be held in Chandler, April 30, May 1, 2, and 3, 1958.

Office Space For Rent
31 West Camelback Rd.
Phone CR 7-3337

OBITUARY

FRANK A. NELSON, M.D.

1897-1956

FRANK Arleigh Nelson was born Jan. 3, 1897 in Boise, Idaho and his childhood was spent in the farming area of that region. He served in the United States Army through World War I and attended the University of Nebraska for premedical and medical training, graduating in June 1923. This was followed by an internship after which Dr. Nelson entered private practice in southeastern Nebraska, a course he pursued for eight years until he entered the United States Indian Service in the capacity of senior physician. He served as the head of a number of hospitals on the reservations in various Rocky Mountain states. His last assignment

in the Indian Service was as senior physician for the United States Indian Hospital in Phoenix, Arizona.

Dr. Nelson resigned from the United States Indian Service in January 1944 to accept a position with the Phelps Dodge Corporation at the New Cornelia Hospital, Ajo, Arizona. He continued the practice of medicine at this hospital, assuming the position of chief surgeon in July 1955, a position he held at the time of his death on Oct. 28, 1956, due to myocardial infarction.

His close associates had warm admiration and high respect for him both personally and professionally.

H. J. MILLS, M.D.



Phoenix Clinical Club

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL

PRESENTATION OF CASE 31162

FIRST admission. A 54-year-old shoe cutter was admitted to the hospital because of swelling of the abdomen.

One year prior to admission the patient developed a generalized itching unassociated with any skin lesion or jaundice. About two months later he noted increasing tiredness, although he was able to continue working. About six months before entry he noted swelling of the legs brought on by standing for any length of time and disappearing after a night in bed. Soon thereafter he noticed that the abdomen was swollen and continued to enlarge, and a protrusion developed in the region of the umbilicus. Three months prior to entry he developed increasing dyspnea on exertion. A physician prescribed diuretic pills, following which the patient lost about 20 pounds in a few days. His abdomen, however, did not appreciably decrease in size. There was no history of gastric discomfort except for gaseous eructations after meals, and no hematemesis, melena or unusual stools. He had lost a "considerable" amount of weight over a period of six months.

The patient had been a rather heavy drinker of beer, augmented with whisky and rum, before the onset of his symptoms. There was no history of exposure to drugs and chemicals other than alcohol. He had typhoid fever at the age of 20. One and a half years before admission he had a high-vein ligation in the right leg, and the veins of the left leg were injected at the same time.

Physical examination revealed a rather frail sallow man showing evidence of considerable weight loss. The lungs revealed fine moist rales at both bases, and diminished breath and voice sounds over the entire chest. The diaphragm

was high, bilaterally. The heart sounds were clear, with splitting of both sounds and a questionable systolic murmur at the apex. The abdomen was markedly distended and tense, with shifting dullness and a fluid wave. A completely reducible umbilical hernia was present. No organs or masses were felt. A massive left scrotal hernia, completely reducible, was present. Both legs revealed evidence of stasis dermatitis. There was pitting edema of both feet, and induration of both legs to the knees. The knee and ankle jerks were not elicited, but other reflexes were normal. The temperature was 98° F., the pulse 90, and the respirations 22. The blood pressure was 112 systolic, 70 diastolic.

Examination of the blood revealed a red-cell count of 4,300,000, with 12 gm. of hemoglobin, and a white-cell count of 7,700, with 76 per cent neutrophils. The urine was negative. The serum nonprotein nitrogen was 31 mg. per 100 cc., the protein 5.6 to 6.8 gm., with an albumin-globulin ratio of 1.05, and the chloride 95 milliequiv. per liter. A bromsulfalein test showed retention of 30 per cent of the dye. A cephalin flocculation test was + after 24 and 48 hours. Venous pressures taken in the antecubital space and femoral vein were equivalent to 18.5 and 14.5 cm. of water, respectively, on one occasion and to 20.5 cm. in both places on another. Fluid removed from the left chest had a specific gravity of 1.012, with a cell count of 1,419 red cells and 138 white cells, of which 22 per cent were neutrophils, 76 per cent lymphocytes and 2 per cent eosinophils. Fluid from the abdominal cavity had a specific gravity of 1.014, with a cell count of 2,610 red cells and 550 white cells, practically all of which were lymphocytes. The latter fluid contained 4.2 gm. of protein per 100 cc., and both the chest and ascitic fluids were negative for tubercle bacilli on smear and guinea-pig inoculation and for tumor cells. A sputum examination was negative for tubercle bacilli on smear. A blood Hinton test was negative.

A roentgenogram of the chest revealed a heart that was slightly enlarged but was within the limits of normal by measurement. There was a considerable amount of fluid in both pleural cavities. No liver shadow could be made out, and the hepatic flexure came almost to the diaphragm. The spleen was not enlarged. A

barium swallow revealed a normal esophagus without evidence of obstruction or varices.

An electrocardiogram showed slight right-axis deviation. There were low-voltage QRS complexes and flat T waves in the standard leads.

The patient was placed on a high-calorie, high-vitamin diet with fluids restricted to 2,000 cc. daily. A peritoneoscopy was performed on the third hospital day. The right lobe of the liver presented a rounded edge that was just below the costal margin. The left lobe presented a rounded edge that extended down to the level of the umbilicus. The surfaces of both lobes were extremely irregular and in places hobnailed, and they were covered everywhere with innumerable white, pinpoint tubercles. Some of these tubercles were seen on the peritoneal surface of the abdominal wall, overlying the left lobe of the liver. The transverse colon, small bowel and omentum in the upper part of the abdomen were involved in a red inflammatory mass in which there were a few tubercles. The lower abdomen appeared essentially negative. A biopsy specimen from the anterior surface of the left lobe of the liver showed no obvious abnormality.

On the 10th hospital day a paradoxical pulse was noted, and two days later a pericardial friction rub was heard. A fluoroscopic examination of the chest at that time revealed a small cardiac beat and no localized enlargement. There was no evidence of pericardial calcification, but there seemed to be some evidence of pericardial adhesions about the heart. The circulation time (arm-to-tongue) was 30 seconds. In spite of these findings, the patient continued to improve. He gained 15 pounds without significant accumulation of ascitic fluid, and was discharged to his home on the 30th hospital day.

Second admission. (two months later). Following his discharge, the patient felt well except for persistent exertional dyspnea and some increase in abdominal distention. He gained about 10 pounds. He was readmitted for re-evaluation of his condition with a possibility of operation.

Physical findings were essentially unchanged except that the pericardial friction rub was no longer heard. The heart sounds were muffled. The pulsus paradoxicus was still present. The neck veins were pulsating and distended, there was considerable ascites and edema of the legs and feet, and the superficial veins of the abdo-

men were prominent. A roentgenogram of the chest showed no definite change. Several chest and abdominal taps were performed and the patient was given injections of Mercupurin to relieve him of some of the fluid.

On the 28th hospital day an operation was performed.

HOWELL RANDOLPH, M. D.:

This 54-year-old shoe cutter was admitted to the hospital because of swelling of the abdomen. This swelling was quite extensive over a period of a year, beginning about a year and a half before. About one year before, there had been itching of the skin without development of jaundice or any skin lesions. The gradually increasing edema of the abdomen was persistent and was associated with dependent edema of the lower extremities. There was never any hemorrhage into the gastrointestinal tract. The physical examination on the two admissions showed the persistence of enlargement of the abdomen, but there was loss of general body weight. There was increasing shortness of breath with the increasing abdominal distention.

Past History: Typhoid at the age of 20. He has been a heavy consumer of alcoholic beverages, principally beer, but also whisky and rum. So far all of the facts regarding this patient seemed to point toward diagnosis of cirrhosis of the liver. Then, in addition to this, the peritoneoscopy showed "nodular liver." The bromsulfalein retention test showed 30 per cent dye retention, but the cephalin flocculation was negative. At the same time, the peritoneoscopy showed what looked like tubercles over the surface of the liver and the viscera of the upper abdomen, but the biopsy of the liver was reported as negative. Following on through the history, we find that many of the other findings are consistent with cirrhosis of the liver; the absence of fever, a moderately elevated pulse rate; the reduction of serum albumin and serum protein; also the specific gravity of the fluid, 1.012, in the abdomen and the large number of WBA and RBC found in both pleural and peritoneal fluids is not inconsistent.

The patient's treatment was a high calorie and high vitamin diet, as usually prescribed in liver disease. Prominence of the superficial veins of the abdomen is very suggestive of portal cirrhosis. The very fact that the patient was operated on the 28th hospital day is not inconsistent with a diagnosis of cirrhosis of the liver.

A recent description of a post-necrotic cirrhosis of the liver may be of interest. This consists of a type of cirrhosis characterized by fibrotic bands separating areas of parenchymal hepatic tissue, in contrast to the diffuse fibrosis involved in Laennec's cirrhosis.

Could tuberculous peritonitis have been present? No tuberculin test is recorded. No tubercle bacilli were found in the fluids of guinea pig inoculation or smears. There was no fever recorded.

There was no record of this patient having passed through a period when tuberculosis could have been active.

No, I do not think that active tuberculosis is present.

Could these "tubercle formations" have represented carcinomatous lesions?

I am inclined to rule this out on the basis of the fact that most assuredly a biopsy of the lesion would have yielded a diagnosis, and the absence of cells in the fluids.

Now, reviewing the case from the standpoint of a cardiac lesion, we might list the symptoms as fatigue, starting a year before admission, with increasing tiredness. The edema, which has been noted before is consistent with cardiac failure. The dependent edema is quite characteristic. Later abdominal swelling was persistent and gradually increasing. The shortness of breath increasing for three months with the presence of abdominal fluid. There was a good response to diuretics.

On physical examination, the man was frail and had undergone weight loss in spite of the edema. The breath sounds were diminished over the chest and there was fluid accumulation in the pleural spaces as well as in the abdomen, which suggests cardiac decompensation. A questionable systolic murmur was present at the apex. There was some question of the disappearing friction rub on two different admissions. If the size of the heart was not particularly increased on the x-ray, what type of heart disease would explain the edema in the absence of renal failure? There was no hypertension, no rales, and no evidence of cardiac enlargement. There was no primary agent that might have caused myocarditis. All of these findings are consistent with diagnosis of constrictive pericarditis, and in addition, certain factors seem to point toward this diagnosis. The special prom-

inence of the accumulation of fluid in the abdomen at an early date is suggestive. By the time severe generalized edema has occurred in heart disease, the heart is almost always enlarged unless there is some reason for maintaining its narrow diameter. The rather low pulse pressure of 42, and the fairly rapid pulse of 90, is suggestive. The electrocardiograph pattern described is a perfectly typical textbook picture of constrictive pericarditis, with right axis deviation, low voltage of QRS complex and flattened T-waves. The T-waves may be slightly inverted. A very suggestive finding is the paradoxical pulse. This is caused by a sharp drop in the systolic blood pressure during inspiration. An attempt should be made to record the level of the systolic pressure and the number of points it drops with inspiration. Another sign which might have been helpful would be the finding of calcium in the pericardial shadow. No mention is made of this in the chest x-ray. Still another finding which is not explained by cirrhosis of the liver, is the high venous pressure both in the arm and in the femoral vein. Normal is 7-10 instead of 20½ as recorded here. A retraction of the inter-spaces posteriorly in the inferior chest is present sometimes in adhesive pericarditis and when fluid is present, this could be obscured.

The report of a friction rub at one admission, and two months later its absence, is a bit disturbing in that one would expect that this adhesive pericarditis had been present for some time and no space would be left for the friction sound. However, if definite friction sound is heard, there can be no question about the presence of some degree of pericarditis. Give-away findings might have been recorded if further studies of the x-ray with absence of shift on posture, had been recorded. Usually, also engorgement of the veins of the upper extremities and neck is present, and must have been present in our patient, in view of the increased venous pressure, although it is not mentioned in the physical examination. The usual methods of treatment of cardiac failure are ineffective in pericarditis. Diuretics bring about only temporary improvement. Up until 1940 relatively few patients had been subjected to surgical treatment, but now many cases have been reported and the operation has become relatively standardized. The excision of the pericardium must include the band around the venous structures of the auricles. Difficulties are encountered in sep-

arating the pericardium from the heart at times, and releasing the auricles and the venous structures present a problem when no line of cleavage can be determined. Immediately after release of the constricted pericardium however, the patient's cardiac output is so promptly increased that postoperatively the patients do very well.

While it is difficult to differentiate cirrhosis of the liver, in the presence of nodular liver such as we have here, and adhesive pericarditis, in this particular instance we have instead of enlargement of the liver, an apparent contraction of the liver, therefore, it seems rather tempting to indulge in the pastime so often attributed to amateurs of making a diagnosis. However, although I do believe there is some degree of cirrhosis of the liver in this case, nevertheless, the primary disease of adhesive pericarditis could have been a factor in producing this liver change.

Diagnosis: Adhesive pericarditis. Secondary cirrhosis of the liver with passive congestion.

Operation: Pericardiectomy.

R. LEE FOSTER, M. D.:

We are presented here essentially with the case of a 54-year-old man, whose presenting symptom was swelling of the abdomen. Over the past year he had developed generalized itching, increasing tiredness, dependent edema, and apparently a polyserositis. At least the physical findings indicated abdominal ascites and bilateral pleural effusion, and very likely some pericardial effusion near the end. The pericardial effusion we are not very sure of, but there seems to be considerable evidence of pericardial adhesions. There is a somewhat enlarged "hob-nail" liver without evidence of splenic enlargement. Of course, this patient had as enumerated by this long protocol, numerous other symptoms, physical findings, and laboratory findings, but these are the cardinal ones. He had several diagnoses also, complete within themselves, such as for example the left scrotal hernia, the reducible umbilical hernia, and the stasis dermatitis of both legs. These we will accept and forget. To attempt to run a differential diagnosis on each of the outstanding symptoms on this patient would lead us far afield and into the consideration of numerous diseases. There are many diseases, for example, which may cause generalized pruritis. There are many disease which may

cause ascites, and there is another group of diseases associated with enlarged liver, and other groups which may be responsible for the other symptoms and findings mentioned. I can think, however, of one outstanding condition which may have, and usually does, all of these findings which I have enumerated. I refer to Friedel Pick's disease and particularly the clinical variety usually referred to as a chronic constrictive pericarditis. I shall spend most of my time therefore trying to make a good case for this diagnosis and very briefly dispose of other conditions which do need to be considered. I found the best description in the fewest words in Cecil's Textbook of Medicine from which I now quote.

"Dyspnea, swelling of the abdomen and occasionally edema of the ankles (usually not in proportion to the abdominal enlargement) are the characteristic symptoms encountered in chronic constrictive pericarditis. Increasing prominence of the cervical veins may be noted and sometimes there is swelling of the face. General weakness and low-grade fever are occasionally present.

Physical Signs — Inspection reveals conspicuous engorgement of the veins of the neck (the venous pressure may be 20-45 cm. of water, i.e., two to five times the normal). The distention of the veins is often present in the sitting, as well as in the recumbent position. Cyanosis of the lips and nail beds may be present. Inspiratory swelling of the veins of the neck is a common and important sign. Orthopnea is inconstant. There is moderate or even extreme enlargement of the abdomen usually with a fluid wave. Pitting edema of the legs and ankles is often found. The liver is regularly enlarged and firm, but usually it is not tender and does not pulsate. Splenomegaly rarely occurs. The pulse is small, the systolic blood pressure and pulse pressure are characteristically low, or within the lower limits of normal. Pleural effusion is commonly present. The fluid, like that found in the abdomen, usually has the characteristics of a transudate.

The heart is usually small and quiet. In most cases, the rhythm is regular, but irregularity arising from auricular fibrillation or extrasystoles is sometimes encountered. The sounds may be distant, but otherwise are of normal intensity. Systolic apical murmurs may be present.

The electrocardiogram is helpful in the recognition of chronic constrictive pericarditis. Usu-

ally there is low voltage of QRS complexes; and the T waves of lead 1 and lead 2 are frequently of low amplitude, or negative. If the heart be immobilized by adhesions, the electrical axis may not alter with change of position of the body, as pointed out by Dieuaide, but fixation of the electrical axis is by no means pathognomonic. The detection by x-ray of calcareous deposits encircling the heart is practically pathognomonic of adherent pericardium. The cardiac silhouette is usually of normal size, though marked thickening of the pericardium may suggest hypertrophy or dilatation. Decrease in the amplitude of the pulsations of the heart, particularly of the right border, is the usual fluoroscopic finding."

This then, I submit, is almost a duplicate description of our present protocol. A few small things are lacking, such as calcification within the pericardium so far as could be told. Without taking your time therefore to point out the numerous points of agreement and to defend or to explain away the few small points of disagreement, I submit this as my diagnosis and take only the remaining few minutes to eliminate some of the competing diagnoses. Polyserositis or general tuberculosis of the serous membranes is the most serious contender. The description of tubercles on the liver and in the various portions of the abdominal cavity as viewed by peritoneoscopy is certainly suggestive. However, the negative cultures, smears, and guinea pig inoculations in the pleural and ascitic fluids, as well as the negative sputum examination is very strong evidence against this. Also we would assume that the peritoneoscopist would have biopsied the liver at the site of at least one of these tubercles, and the pathologist did not find any evidence of tuberculosis. I therefore dismiss this diagnosis for lack of other confirmatory evidence.

The group of lymphomata must be considered, including Hodgkin's disease, Hodgkin's sarcoma, lymphosarcoma, and such. Any one of this group can be responsible for many of the symptoms and findings which this patient had. I do not find, however, any mention made of any mediastinal lymphadenopathy, or in fact any mention made of any lymphadenopathy anywhere. I discard this group then without much feeling. Malignancies of various kinds, either primary or secondary to the body cavities must also be con-

sidered, but no tumor cells were found in any of the fluids obtained, no tumor cells were found in the liver biopsy, and the patient had no outstanding disturbances of any of the body systems to suggest malignant etiology. I discard then malignancies as a group.

Theoretically beriberi heart could give many of the symptoms and signs which this patient had, but in spite of the history of alcoholic intake, there is no clear-cut history of dietary deficiency, peripheral neuritis, tenderness and atrophy of the muscles, etc., which are found with beriberi heart. Also, this patient has many things not usually found with a beriberi heart per se.

Cirrhosis of the liver and particularly portal cirrhosis deserves mention. The history of alcoholism, the enlarged liver, and the ascites demand that we mention this. It is hard, however, for me to fit the cardiac picture into this diagnosis.

My diagnosis is, then, (1) Friedel Pick's disease, or chronic constrictive pericarditis, and I believe the operation performed was probably a pericardial resection.

Differential Diagnosis

Dr. Conger Williams: The generalized itching without jaundice did not mean much to me in the light of what happened later, so I shall overlook it for the moment.

In the differential diagnosis of ascites, it is important to know whether or not there is leg edema and, if so, what the time relation of its onset is to that of the ascites. We are told here that swelling of the legs came on before the ascitic swelling was noticed. When the cause of ascites and leg edema is intra-abdominal, ascites develop first and leg edema later, owing to pressure of fluid on the intra-abdominal veins. If, however, both are due to heart failure, edema of the legs commonly appears first. In the case of constrictive pericarditis, ascites is often out of proportion to the amount of leg edema and may appear first. In this case, the sequence of events is unusual for heart failure in that signs of peripheral congestion preceded dyspnea.

Obviously the diagnosis of cirrhosis of the liver was considered because of the history of alcoholism, but a search for esophageal varices was negative. The appearance of fluid in the legs before the development of ascites is also

against the diagnosis. I suppose that the patient had varicose veins, but it does not say exactly why the vein was ligated. Obviously the injection was done for varicosities, whether or not he had had thrombophlebitis, we do not know.

In brief, the cardiac findings on physical examination were not remarkable. Obviously the degree of ascites was out of proportion to the degree of leg edema.

We know nothing about the course of this man's temperature, either before or after admission.

In the differential diagnosis of edema, determination of the serum protein should be a routine procedure. The value of 5.6 to 6.8 gm. per 100 cc. is a little on the low side, but not low enough to be significant.

Thirty per cent dye retention in the bromsulphalein test is a moderately abnormal finding, but it is found in cases of simple liver congestion, without much in the way of parenchymal liver disease. Also, the cephalin flocculation test was equivocal, and can be explained on a basis of liver congestion alone.

The venous pressure readings were abnormally high, a finding of greater importance in making the differential diagnosis than any other reported physical or laboratory finding. I shall discuss it later in greater detail.

The characteristics of the abdominal fluid suggest an exudate rather than a transudate. The protein was high, the specific gravity was fairly high, and the cell count suggests more of a lymphocytosis than one expects from an ordinary bloody tap. So it is likely that a factor other than increased venous pressure was active in the production of ascites. The question of infection with tubercle bacilli is one of the most important things to consider in the differential diagnosis of ascites. A negative finding, however, especially on examination of the sediment of the ascitic fluid, means nothing. I think one can say that in tuberculous peritonitis one seldom gets a positive smear for acid-fast bacilli. Furthermore, it has been said that guinea pig inoculations are positive in only about 50 per cent of the cases. Thus, the negative findings in both of these determinations mean little. Also, the fact that the sputum was negative for tubercle bacilli is of little consequence.

Dr. Laurence L. Robbins: I have not been

able to find the films taken on the first admission. I gather, however, that there was no change in the appearance of the heart or lungs. Someone made the statement that the heart was within normal limits of size by measurement. In none of these films is it possible to see the cardiac shadow sufficiently to be certain of it. This observation must have been made by the fluoroscopist. The fact that there was a small beat is of some importance.

Dr. Williams: How about a large amount of pericardial fluid? Is that possible with this sort of right border?

Dr. Robbins: It depends on how much you mean by a "large amount." There can be a lot of fluid in the pericardial cavity even with that configuration.

The lung fields are not remarkable. So far as I can see, there is no evidence of disease in the lower and upper lobes, other than this linear fibrosis in the apices which indicates a previous infection.

Dr. Williams: Is this shadow the septum of the middle lobe?

Dr. Robbins: Yes; with some fluid extending into it.

Dr. Williams: These pictures are not particularly helpful, but I did not expect them to be. We know that he had fluid in the chest because of the findings on physical examination and because of the fact that a goodly amount was withdrawn.

I saw the electrocardiograms, and the low voltage and the flat T waves are suggestive of pericardial involvement, which fits in later in the differential diagnosis.

I wonder whether the apparent hobnailed surface of the liver was related to the tubercles on the peritoneal surface. The record states that the biopsy showed no apparent intrahepatic disease. I do not believe that that means much one way or another. It is definitely stated, however, that tubercles were seen on the edge of the liver. The question I should like to raise is: Were these real tubercles, or something simulating them? It is well known that widespread carcinoma may mimic tuberculosis, in the gross at any rate. We have no report of a histologic examination. I think it most probable, however, that these were real. The description of the transverse colon sounds like localized tuberculous in-

fection in the abdomen.

A paradoxical pulse was noted. The question here is whether it actually appeared at that time, or whether it was noted for the first time, having been present previously. It seems unlikely that a paradoxical pulse would develop so fast, unless, there was a considerable amount of pericardial effusion. The x-ray picture suggests that the effusion, if any, was insignificant. Since there apparently was no great change in the blood pressure, and no sudden change in the clinical state, I am doubtful about the presence of pericardial tamponade. I suspect that pericardial involvement had been present for some time before the onset of symptoms, and that the paradoxical pulse was also present long before it was observed for the first time. The friction rub suggests that there was acute inflammation of some part of the pericardium. Of course, that often takes place in the presence of old pericardial fibrous changes. The small amplitude of heart beat may have been due to old pericardial adhesions. The absence of pericardial calcification means nothing in deciding the presence of constrictive pericarditis.

It is quite likely that dyspnea at the time of the second admission, as well as on previous occasions, was due to an accumulation of fluid in the chest. Also, dyspnea is a symptom of constrictive pericarditis.

In describing a paradoxical pulse, the variation in systolic blood pressure between inspiration and expiration should be recorded. A good many normal people have a paradoxical pulse of slightest degree, and it is often quite marked in bronchial asthma. The use of the term, "pulsus paradoxicus" without qualification is not especially helpful. In this case, however, the finding is significant, especially in association with distended and pulsating neck veins. The later observation was not recorded until the second admission, but the high venous pressure measurement suggests that visible venous pulsations in the upright position were also present at the time of the first admission.

I wonder whether the operation mentioned was an abdominal or thoracic procedure. Abdominal exploration is sometimes performed in tuberculous peritonitis. I suspect, however, that this was a thoracic operation and that it probably consisted of a pericardial exploration, because everything in the history points to a diagnosis of constrictive pericarditis — a high venous

pressure in association with ascites, leg edema, and the finding of a paradoxical pulse. Also the electrocardiographic findings are typical, and the absence of normal pulsation on fluoroscopic examination is suggestive. Also significant is the apparent absence of intracardiac involvement to explain the high venous pressure. I am therefore practically forced to accept the diagnosis of constrictive pericarditis.

The next question is, what is the relation of this to an apparent tuberculous peritonitis? Was the constrictive pericarditis also tuberculous, or was it the much more frequent nonspecific pericarditis, complicated by tuberculous peritonitis? It is more logical to suspect that the picture can be explained on the basis of a long-standing tuberculous constrictive pericarditis in association with tuberculosis of other serous surfaces, including the pleura and peritoneum. Tuberculous peritonitis alone does not explain the increased venous pressure and the findings in the lungs, unless one assumes that there was an independent tuberculous pleural process going on. We therefore must assume that something was going on outside the abdomen. One might say that the absence of fever and the increased white-cell count are perhaps against the diagnosis of tuberculous peritonitis, but we do not have a detailed record of the temperature. It is possible to have this picture caused by tuberculosis and at the same time to have a normal temperature. It is not usual, however, to have a high white-cell count in association with tuberculous peritonitis.

If this is tuberculosis, and it seems likely that it is, the next question that comes up is: Where was the original focus? So far as I can tell, it was not in the lungs; perhaps it was in the mediastinum or elsewhere. It is true that cases like this usually have an obvious primary tuberculous focus. All I can say is that it just was not found.

CLINICAL DIAGNOSES

Polyserositis, with chronic constrictive pericarditis.

Bronchopneumonia.

DR. WILLIAMS'S DIAGNOSES

Tuberculous constrictive pericarditis.

Tuberculous peritonitis.

ANATOMICAL DIAGNOSIS

Polyserositis.

PATHOLOGICAL DISCUSSION

Dr. Ronald C. Sniffen: I am sorry that Dr. White is not here, since he followed this patient rather closely through his medical career. Neither is Dr. Sweet, who performed the operation. Before he operated, Dr. Sweet made the remark that this type of case was most unfavorable for pericardiectomy, as judged from the experience of this clinic and others, because of the obvious activity of the process. But in view of the patient's continued downhill course, he did operate and found a constrictive pericarditis. Thereupon he removed strips of the thickened pericardium from the anterior surface. After operation the patient did extremely well for a few months. It was seven months before he came in again, at which time he was in much the same condition as before operation. It is a little unusual for a patient to do well postoperatively and then fail rapidly within a few months. Generally speaking, if the operation is not helpful, there is no postoperative interval of improvement.

At the time of death the patient showed peripheral edema of the lower extremities to the knees. He had prominent neck and chest veins. In the distended abdomen there were umbilical and left inguinal hernias. The abdominal cavity was striking in that all the peritoneal surfaces were greatly thickened and appeared milky. This process involved the liver and spleen, and had produced adhesions around these organs. The serosa of the gastrointestinal tract was tremendously thickened, but there were no adhesions between the various loops of bowel. The liver weighed 1,980 gm. and, on section, showed a distinct lobular architecture, and was quite tough. Microscopically the liver showed advanced central congestion and necrosis leading to an early cardiac cirrhosis. Each pleural cavity was largely obliterated by fibrous adhesions and contained about 100 cc. of fluid. There were also adhesions between the medial surfaces of the lungs and the pericardium. The entire pericardium was tremendously thickened, and the heart was fixed to the anterior chest wall and to the posterior mediastinal structures. The thickening was most impressive over the auricles, especially the right, where it measured as much as 1 cm. The orifice of the superior vena cava was narrowed to slightly more than 1 cm. in diameter. The orifice of the inferior vena cava, however, was capacious, measuring 3 cm. in diameter.

The hepatic veins entering the inferior vena cava were not appreciably narrowed. The heart itself was not enlarged, and revealed no intrinsic disease.

A blood culture and cultures of the fluid from the various cavities were negative, and guinea pig inoculations were negative. Sections from the various serous surfaces showed a nonspecific subacute inflammatory process, with the laying down of many layers of collagen.

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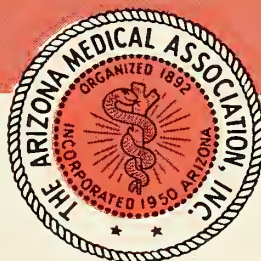
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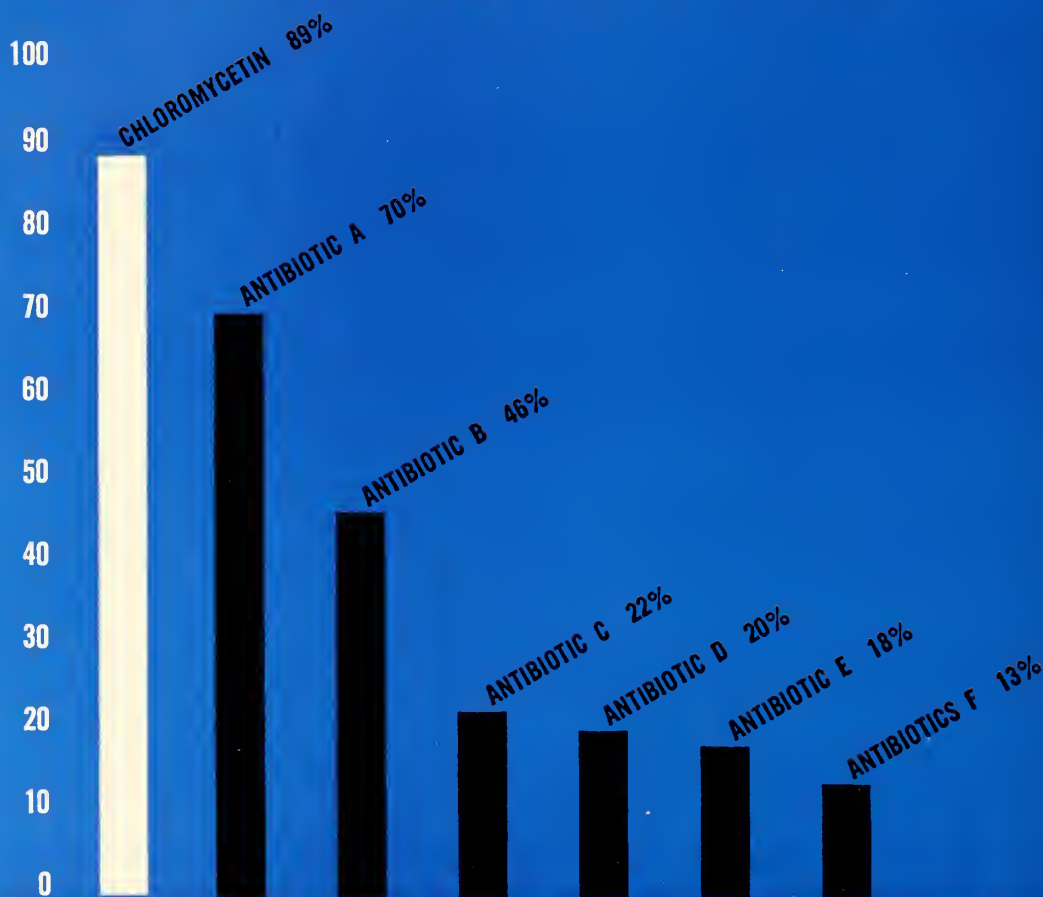


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Original Articles

NOTES ON THE HISTORY OF CLINICAL THERMOMETRY

By Hugh H. Smith, M.D., M.P.H., Tucson, Arizona

"The whole life and practice of one man is so short and limited, as without the assistance of the past and contemporary observations of others to be of very little service to himself, and still much less to the rest of mankind." — George Martine, M.D., 1740.

NEW INSTRUMENTS sometimes leave the hands of their inventors in a nearly perfect state, but more often the seed of the invention is planted by one, cultivated by others, and the harvest gathered by subsequent workers who ignore the original sower. The origin and development of the thermometer is such a case. The task of sketching the history of the thermometer and of its application to clinical medicine is a difficult one; the original inventor is known only at second hand, and many were the contributors in the shaping of its development from a crude toy to an instrument of precision. This metamorphosis required, as will be seen from the account below, well over a century.

Weir Mitchell in his essay(1) on the subject terms the last years of the 16th and the first years of the 17th centuries as the birth era of instrumental accuracy in medicine. In Padua, "the garden spot of science," probably between 1590 and 1600 Galileo Galilei (1564-1642) de-

signed a primitive thermoscope, which consisted of a glass bulb the size of a hen's egg, with a long stem the thickness of a straw and dipping into water. The water was made to rise part way up the tube by previous warming of the bulb to expel a portion of the air. Later Galileo substituted wine for water, which by freezing easily broke the glass tube. This instrument was not very satisfactory for measuring temperatures, as it was also affected by variations of atmospheric pressure. The extant writings of Galileo contain only a casual reference to the thermoscope, but in his correspondence with contemporaries there is evidence that he was the inventor and that he used it in his scientific investigations and sought to improve its efficiency, as he did also with the compass, the telescope, and the microscope.

Galileo made another contribution of special importance to medicine. In watching the huge bronze lamp suspended on a chain swaying in the breeze in the tower of Pisa, he conceived the theory of the pendulum and timed the constancy of the swings with his own pulse. This led to the designing of an instrument which he called the pulsilogium for the timing of the pulse rate.

A Venetian noble, Giovanni Francesco Sagredo wrote to Galileo in 1613 that the "instrument

you invented I have bettered"(1). Sagredo seems to have hermetically sealed the tube of the thermoscope, although it is not clear that he sealed it so as to leave a vacuum.

In the meantime, a new and interesting personage appears on the stage. Santorio Santorini (1561-1636), better known as Sanctorius, at the age of 21 years took his degree in medicine at Padua; for three years he applied himself to clinical study. After some years abroad, he returned to Padua. His first book, "*Methodi Vitandorum Errarium Omnium, etc.*," appeared in 1602. He was later appointed to the professorship of theoretical medicine at Padua. His medical fame today rests upon his early experiments on metabolism and upon his studies on what he called "insensible perspiration." His well-known book, "*Ars de Statica Medicina*," appeared in several editions beginning with 1614. Sanctorius published his "*Commentary on Avicenna*" in 1625, and it was in this book that he described his use of the pulsilogium, thermoscope, and other instruments in clinical medicine. For his application to the study of patients, Sanctorius modified the thermoscope of Galileo rendering it more sensitive. There seems to be no doubt that Sanctorius was the first physician to attempt measurement of the exact heat of the human body as an aid to diagnosis. "We have here," he says, "an instrument with which we may closely measure the degree of the recession of the heat of the external parts, and with which we may daily learn with accuracy how much we vary from the normal; also the degree of heat of your patients". He taught the first lesson of using the mouth to obtain a record of body heat, providing a hood around the bulb for the patient to breathe into. However, he gives no table of temperatures and no records. No real good came of it.(1)

As the centers of learning in northern Italy were visited annually by scholars from all parts of Europe, knowledge of the new instruments rapidly became disseminated, and men with inquiring minds began to experiment with them in several countries. Such a one was the French mathematician, Jean Leurechon (1591-1670), who is said to be the first to apply the word "thermometer" to Galileo's primitive instrument in his book, "*Recreations Mathematique*," appearing in 1624.

Another early experimenter with the thermometer was a French chemist and physician, Jean Rey (1583-1645). Rey's improvement of the thermometer (about 1632) consisted of filling the glass bulb with water, so that the expansion or contraction of the fluid with temperature changes produced a reading on the scale. Galileo's thermoscope had depended on the expansion and contraction of air above the water. Jean Rey was a man of considerable parts. He was a friend of Descartes and conducted a voluminous correspondence with many scientific contemporaries. His experiments on the heating of tin and lead, demonstrating that there was a definite increase in weight during the oxidation process, preceded the more precise work of Lavoisier by 150 years.(2),(3)

Ferdinand II, Grand Duke of Tuscany (1610-1670), patron of the arts and sciences, and long familiar with the studies of Galileo and Sanctorius, took personal interest in the improvement of the thermometer, bringing into more general use glass instruments hermetically sealed with spirits enclosed(4). A graduated scale was attached to the stem. These thermometers were known as Florentine and were first introduced between 1641 and 1654. The Accademia del Cimento founded by the duke and lasting for only 10 years, took up the problem of selecting two fixed temperatures for the thermometer and of subdividing the interval between into a suitable number of degrees. The cold of winter and the heat of summer were taken as the two fixed points, with the intervening space being divided into 40 or 80 degrees. The melting point of ice was found by them to be invariable and read $13\frac{1}{2}^{\circ}$ on their scale.

These Florentine fixed points proved unsatisfactory and all sorts of improvements were suggested. Robert Boyle (1627-1691), who visited Italy in 1641 and spent some months in Florence, is credited with introducing one of the earlier models of the Florentine thermometer into England(5). Boyle conducted many experiments on temperature, demonstrating the equable temperatures of deep caves, which were published in his "*New Experiments and Observations Touching Cold*." He recognized that the lack of a fixed standard made difficult the comparison of data collected by different individuals in various parts of the world.

The Florentine thermometer reached Paris by way of Poland. The French astronomer, Ismael Boulliau (1605-1694), received one which was 10 centimeters long, containing alcohol, from a friend at the Polish court. Boulliau experimented with making similar instruments on his own and produced one using mercury as the expansible fluid. Recently a temperature record made by Boulliau with his thermometer from May 1658, to September 1660, has been discovered. Next to the Florentine records begun in 1655, these are the earliest temperature records known(2).

During the next few decades many learned men of science in Europe undertook studies with these "curious and useful machines." It became generally recognized that fixed points or standard temperatures were necessary, instead of making each degree a given fraction of the expanding fluid in the bulb, as had previously been done.

The first thermometer with a fixed scale was devised by Honore Fabri (1607-1688), a French Jesuit and scientific scholar, in 1661, using snow for the low point and mid-summer heat for the high point(6).

In 1664, Robert Hooke (1635-1703), English physicist and inventor, proposed the freezing point of water as the low point(6).

Christian Huygens (1629-1695), a Dutch physicist who made the first pendulum-regulated clock, is said to have suggested in 1665 the temperatures of melting ice and of boiling water as the two fixed points in the thermometer scale(2).

Edmund Halley (1656-1742), an English astronomer and mathematician, discovered in 1693 that the temperature of boiling water is constant at sea level(6).

In 1694, Carlo Renaldini (1615-1698), professor of mathematics and philosophy at Pisa, proposed that the intermediate points on the scale be determined by observing the temperatures of known mixtures of ice-cold and of boiling water. By this method, the temperature of 50° would be defined as that obtained by mixing equal weights of ice-cold and of boiling water(4).

Sir Isaac Newton (1642-1727), who "carried everything he meddled with beyond what any-

body had done before him, and generally with a greater than ordinary exactness and precision," suggested a scale on which the freezing point of water was taken as zero and the temperature of the human body as 12 degrees. The liquid used by Newton in his thermometer was linseed oil(5).

Other workers soon found Newton's thermometer unsatisfactory. His zero point was set as though he considered freezing water to be the lowest degree of heat. It was discovered, too, that the oil adhered to the sides of the tube and thus gave incorrect readings.

In 1702 and 1703, Guillaume Amontons (1663-1705), a French physicist, published two noteworthy papers on thermometry. His instrument consisted of a U-shaped tube; the shorter arm ended in a bulb and contained air, the longer arm contained mercury. The volume or "spring" of the trapped air varied with the heat to which it was exposed, thus moving the mercury column up or down the tube. Amontons chose the boiling point of water as a fixed point, but as he was unaware that the temperature at which water boils varies with the air pressure, his thermometer was, therefore, not extremely accurate. On his scale the boiling point was marked at 73° and the melting point of ice at 51½°, so that zero on his scale was equivalent to about -240° on the centigrade scale, a remarkably close approximation to the modern value of -273° for the zero of the air thermometer (7), (8).

Ole Roemer (1644-1710), the Danish astronomer who studied in Paris and also in England where he met Newton, Halley, and others interested in thermometry, is also said to have used mercury as the liquid element in his experimental instruments. It is probable that he suggested the use of mercury to Fahrenheit(5), (9). Roemer is remembered especially for his astronomical studies. He measured for the first time the speed of light, making use of observations on the eclipses of the moons of Jupiter.

It is interesting that the best-known name in thermometry is associated with the revival of its application to medicine. Gabriel Daniel Fahrenheit (1686-1736), who was born in Danzig but lived for most of his life in England and Holland, devoted himself to the study of physics

and made his livelihood apparently from the manufacture of meteorological instruments. In Holland, Fahrenheit was on friendly terms with the great Dutch physician, Hermann Boerhaave (1668-1738), who was professor of botany, medicine, and chemistry, as well as rector of the university at Leyden. Fahrenheit became proficient in working glass and probably at Boerhaave's suggestion began practical experiments with thermometers around 1706.

At first, Fahrenheit used alcohol as the fluid medium in his instruments. He took as his zero point a mixture of snow and salt, the greatest cold known in his day, thus apparently hoping to avoid any negative or below zero readings. The high point on his first scale was the temperature of the human body, which was designated as 12°. Later for convenience in having smaller divisions, this number was changed to 96°. Around 1714, Fahrenheit began to use mercury and developed a better method of purifying this element.

The freezing point of water was at that time supposed to be rather variable. Fahrenheit showed, however, that as soon as ice began to form, the temperature always rose to the same point. At a later period he showed, as others had previously suggested, that the temperature at which water boils is always the same at the same barometric pressure. This fact provided a second fixed point on his scale. The freezing and boiling points of water on his scale with human armpit temperature at 96° came out near 32° and 212° respectively.

For some years, Fahrenheit kept secret his methods for manufacturing thermometers, probably for commercial reasons; but between 1724-1726, he published five communications in the *Philosophical Transactions of the Royal Society of London* reporting on his experiments.

During the next few decades quite a number of other thermometer scales were proposed by investigators. In 1731, that remarkably versatile French scientist, Rene Antoine de Reaumur (1683-1757) found that a mixture of spirits of wine and water in the proportion of 4 to 1 increased from 1,000 volumes to 1,080 volumes when the temperature was raised from the freezing point to the boiling point of water. The Reaumur scale was thus set from zero to 80°,

each degree representing an expansion of 1/1,000th of the initial volume of the alcohol. Later on, mercury was substituted for the alcohol mixture used by Reaumur in his investigations (2).

Anders Celsius (1701-1744), an astronomer from Uppsala, in 1742 described the centigrade scale for his thermometers in a paper read before the Swedish Academy of Sciences. He proposed that the zero point be set at the temperature of boiling water and the 100° point be set at the temperature of melting ice. The centigrade scale, as we now know it, was introduced by Dr. Christin of Lyons in 1743, and independently a few years later by a colleague of Celsius, Marten Stromer (1707-1770), of Uppsala, both of whom reversed the scale of Celsius putting the temperature of melting ice as zero.(2)

As may well be imagined, during these first few decades of the 18th century there was much confusion among scientists about thermometers. This was expressed by an extraordinary Scottish physician, George Martine (1702-1741), who writing in 1738(5) says, "What fluid then shall we take for our thermometers? We have found inconveniences in Air, Oil and Spirits; and Water is more exceptionable than any of them. We have nothing left but quicksilver. This is a very moveable and ticklish fluid; it both heats and cools faster than any liquor we know, or have had occasion to try, faster, I am sure, than water, oil or spirit of wine; it never freezes by any degree of cold hitherto observed; and bears a great deal of heat before it arrives at the boiling expansion; and, if well purified, does not stick to the inside of the tube".

The relatively small coefficient of expansion of mercury as compared to the other liquids was an apparent disadvantage, but this could be offset by making the tube in smaller proportions to the bulb. Actually mercury expands about seven times as much as glass for a given rise of temperature.

George Martine in "*An Essay Toward Comparing Different Thermometers with One Another*"(5) experimented with 15 instruments having different scales. He states "we have heard of many other thermometers — but they have been generally so ill limited and de-

scribed, that they are of no manner of use; and to whatever purpose they might serve their authors, are to us as if they never had been."

Another most interesting contributor to the development of thermometry was the Swiss geologist and physicist, Jean Andre De Luc (1727-1817). In his two volumes, "*Recherches sur les Modifications de l'Atmosphere*" (Geneva 1772), are recorded and analyzed the results of a long course of rigorous experimentation. De Luc found both the thermometers and the barometers of his day in an unsatisfactory condition owing to the technical defects in the methods of their construction. He improved Reaumur's thermometer by substituting mercury for alcohol. His principal contribution, however, was a better definition of the techniques for determining accurately the fixed points of the scale; i. e., the freezing and boiling points of water(10).

Gradually over the years, Fahrenheit's scale, with its small degrees and its zero below the freezing point, appeared to have advantages especially for meteorological observations and has been retained in most English-speaking countries. For general scientific purposes, however, the centigrade system is almost universally employed. For many years, Reaumur's scale was popular in Germany, especially for household purposes.

(Continued in October issue)

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THE TREATMENT OF MUMPS AND ITS COMPLICATIONS IN THE ADULT MALE

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MUMPS is an acute communicable disease, highly contagious, spread almost entirely by unrecognized, but common, indirect contacts and caused by a specific virus. Classically, it causes swelling in the parotid glands, less frequently, the submaxillary salivary glands, and as complications may involve the central nervous system, breast, pancreas, thyroid, ovary and testis.

The disease is centuries old and the description of cases occurring during an epidemic on the island of Thasos written by Hippocrates is easily recognizable as the entity we call mumps today. Hippocrates described swelling about one or both ears at the angle of the jaws which receded without suppuration and was frequently accompanied by swollen testicles. However, it was not until 1790 that Hamilton gave us the classical description of the disease. This was followed over 100 years later by Comby's book on the subject and Schlottmuller's monograph in 1904. It has always been a dreaded recruit disease in world armies, and the French, particularly, have given some good descriptions of it in the military service.

Pathology: The characteristic sign of mumps consists of edematous swelling of the parotid gland and the surrounding tissues. Pinpoint hemorrhages occur in the capsule and in the parenchyma. Destructive changes occur which include the presence of cytoplasmic inclusion bodies and disintegration of acinar cells. First, there is an infiltration of mononuclear phagocytes into the necrotic areas around the salivary ducts followed later by lymphocytes. The spread appears to be through the lymphatics, or blood stream, possibly both.

In the testicle, the inflammatory process is not uniformly distributed. The convoluted, or seminiferous tubules, may be completely destroyed and distended with exudate in some areas, while adjacent areas may be either nor-

mal or very slightly involved. The affected tubules contain large number of mitotic sexual cells with few spermatozoa. In the destroyed tubules the exudate consists almost entirely of neutrophils and fixed-tissue endothelial phagocytes. Punctate hemorrhages and coarse fibrin occur in the intertubular connective tissue and between the affected tubules, and the entire tissue is very edematous. Other tissues merely present variations of these processes, depending upon the extent of the damage done. The epithelium adjacent to the tubules usually contains mitotic sexual cells showing the various stages of spermatogenesis. There are small hemorrhages and zones of cellular exudate containing polymorphonuclear leukocytes and endothelial leukocytes surrounding the blood vessels.

Mumps in its natural state is a disease limited to man. In experimental primates it will not pass from one animal to another in the cages. The virus shows a selectivity for the parotid, submaxillary and submental glands as well as certain portions of the nervous system, and occasionally other organs. The ovary is affected far less frequently than the testicle. Because of a high serum amylase, due to the involvement of the parotid glands from which it stems, the assumption has been unjustifiably made that this denoted pancreatic involvement. It is true, the pancreas is occasionally involved, but not nearly as frequently as the testis in the male. At times, the lacrimal glands, the thymus, and Bartholin's glands have been involved, and not infrequently the thyroid and the breasts in the female. The virus is excreted in the saliva early in the disease. The involvement of the central nervous system as a part of mumps is almost universal. Cells in the spinal fluid, principally lymphocytes, and increased protein are commonly found. This has been interpreted as a sign of encephalitis or encephalomyelitis, the assumption being that the cells are extruded through the pia-arachnoid and the Virchow-Robin spaces just as in polio-

myelitis. My own interpretation of this, after seeing thousands of cases of mumps and doing spinal punctures on dozens of them, is that this is largely a manifestation of cells extruded from the perivascular round-cell infiltration and of the meninges, and that true encephalitis or encephalomyelitis in mumps is much rarer than in almost any of the commoner diseases of childhood; but as in all other febrile diseases, encephalitis or encephalomyelitis complicating or following mumps occasionally does occur.

Signs and symptoms: After a variable incubation period averaging 18 days, the first symptom is usually fever, followed by swelling of the parotid gland, which has given the disease its name of epidemic parotitis. In severe cases, the swelling causes marked pain, but tenderness to palpation is present from the onset, varying with the degree of swelling present. A particular point of tenderness is at the angle of the jaw when firm pressure is made with the forefinger at the temporo-maxillary joint while the second finger is pressed behind and under the angle of the jaw. Two other points of tenderness upon palpation are the mastoid tip and the inferior portion of the submaxillary gland. The parotid duct may be protuberant and it is usually surrounded by a small aura of red. One parotid is much more frequently involved than both, though both may be involved simultaneously; at other times as the swelling subsides in one, it follows in the other. In very mild cases, particularly in small children, fever may be absent.

Treatment: The treatment of uncomplicated mumps is purely symptomatic as it is a self-limited disease. It is with the complications that we are particularly concerned.

Meningitis with opisthotonos, and the presence of cells in the spinal fluid, unless severe, requires no treatment, but is self-limiting. When severe, lumbar puncture alone to relieve the pressure is usually all that is needed. Meningitis cannot be considered a complication, but is rather a part and parcel of virtually all cases of epidemic parotitis.

When post-infectious encephalitis occurs in mumps, however, we have quite a different picture. Here the sensorium is involved, muttering delirium may occur, diplopia is not in-

frequent, and signs referable to the brain appear. We shall refer to this later.

Prophylactic treatment: This consists of giving concentrated anti-mumps serum, really gamma globulin, in which 2.5 cc. of the concentrate is equivalent to 25 cc. of the non-concentrated pooled convalescent serum. Under age 12, the dose is 2.5 cc.; in adults, I prefer 10 cc. If exposure is continuous, the dose should be repeated at the end of 10 days. If the serum be used in active treatment, as opposed to prophylactic, particularly in orchitis, my recommendation is that 40 cc. or more be given depending upon the size of the patient and the severity of the lesion.

Also, as a prophylactic measure, may be mentioned the use of mumps vaccine. This is prepared from selected virus grown in chick embryos. A good virulent strain is used, but is not polyvalent as no evidence exists of immunological differences between one strain and another. Persons sensitive to eggs or to chicken on an allergic basis should not receive this vaccine except under constant medical supervision. Otherwise, 1 cc. is given subcutaneously or intramuscularly in two doses a month apart. To maintain immunity, it must be repeated annually. Vaccine immunization will rarely prevent mumps after an individual who is susceptible has been thoroughly exposed. Its principle value lies in situations where larger numbers of susceptible people are going to continue to be continuously exposed during an epidemic. Such epidemics have been stopped by vaccination.

Active treatment: Mumps meningitis requires no treatment. It is part of the disease and, like mumps itself, is self-limited unless some unusual complication occurs.

Mumps encephalitis, or encephalomyelitis, fortunately is a relatively rare complication of mumps, particularly when compared to the same type of complicating factor in measles or chickenpox. If left alone, the majority of cases recover with no attempt at specific therapy. In severe cases cortisone or ACTH may be tried cautiously over a period of several days, realizing that in virus diseases, while the signs of inflammation are allayed by these drugs, actually the quantity of virus may be increased and spread without giving evidence of that fact while the

ketosteroids are being used.

In those cases in which the encephalomyelitis component persists, treatment with typhoid vaccine may be specific in restoring the patient to a normal, useful life. This should never be done outside of a hospital, and it requires special training upon the part of the physician administering the treatment as well as by the nurses on the particular case. The danger of this treatment, which utilizes typhoid vaccine given in large doses, either intravenously or intramuscularly, has long since been obviated by the methods worked out during our 37-year clinical research on this particular entity. The typhoid vaccine treatment is not shock therapy, nor is it fever therapy, for we have not been able to duplicate its results by using the hyperthermia cabinet, nor by non-specific protein injection therapy. I shall not go into this particular matter at this time, but for those who are interested, reference is hereby made to work by Dr. E. G. Knouf and myself on measles encephalitis, and reported in *California Medicine* in July, 1954. This same method applies to other post-infectious types.

The principal complication in the adult male, and the one which in the past has been most difficult to handle, is mumps orchitis. While this disease rarely occurs before the age of puberty, I observed one nine year-old youngster in whom the left testis was involved three days before any sign of swelling of the jaw. Steiner reports a case of orchitis in a nine month-old infant which occurred during an epidemic, the child contracting it from the parents. The father likewise, had orchitis. There are other cases on record of youngsters before the age of puberty, but generally speaking, this is unusual. It is interesting to note that there also are cases on record of orchitis occurring in undescended testicles, particularly those incarcerated in the inguinal canals. While the incidence of orchitis in mumps varies greatly, in my experience it has been far higher during the course of mumps in those males who are permitted to engage in any activity whatever, after they have reached the age of puberty.

A careful study of epidemics reported in schools and in military establishments, when critically analyzed, furnishes a reason for the great variance in the incidence of complicating

orchitis per 1,000 cases of mumps reported: this has varied from 5 per cent to 100 per cent. Critical analysis in every instance tends to support the view that the highest incidence of orchitis consistently occurred in those groups in which physical activity was the greatest during the acute stage of their mumps. At present, most doctors allow mumps patients who are past puberty to be out of bed for visits to the toilet, or to sit in chairs in the bedroom to rest themselves from the monotony of bed care. From observation of many cases of mumps in private practice; in 34 years of experience in the Communicable Disease Unit of the Los Angeles County General Hospital; and as surgeon to a 500-bed military mumps hospital in which the patients were poorly housed in Sibley tents, from which they had to journey forth during inclement weather to outdoor latrines to answer the call of nature; I am convinced that the dictum: "It makes no difference whether or not a patient with acute mumps be permitted up or kept in bed," is a very bad teaching and not founded on fact. Based upon prolonged observation, in my opinion every male patient past the age of puberty with mumps should be given a well-fitted scrotal support at once, and should be kept in bed and not allowed up for any purpose until at least four days after all swelling has disappeared. When this regimen was placed in force in the 500-bed military mumps hospital previously mentioned, the orchitis incidence (which had been virtually 100 per cent, all patients being affected) decreased to about one in five. I have no accurate figure because things moved too fast in wartime, and that was nearly 40 years ago, in subzero weather.

The treatment of the adult male with mumps has been indicated in the foregoing paragraphs. Put the patient to bed, insist upon the use of a bedpan and urinal, support the scrotum with a well-fitting suspensory, and treat the patient symptomatically. As far as orchitis is concerned, such therapy comes under the heading of prophylactic treatment. The scrotum should receive support from the first moment with a well-fitting suspensory to take the tension off the spermatic cords. As already mentioned, the patient should not be allowed to go to the bathroom until such times as all swelling has completely subsided, and he should be kept in bed until all swelling of the jaw has disappeared at

least four days.

For a while, female hormones, particularly stilbesterol, had quite a vogue in orchitis therapy. I was never convinced that it accomplished anything.

Mild cases of orchitis take care of themselves unless pressure necrosis takes place, but sometimes it is hard to know whether or not a mild testicular swelling will subside, or else continue to swell until hydraulic pressure will cause complete atrophy. With fully-developed, severe orchitis, surgical interference became common treatment during World War II. Physicians were guided largely by the patient's fever, testicular tenderness upon the slightest touch, the incompressibility of the soft substance of the testis, the amount of swelling, and particularly by pain. Under aseptic precautions, the edematous scrotum was incised and the knife carried down through the tunica vaginalis allowing the hydrocele fluid to drain. The incision used is about 3 cm. long, and under firm pressure the tunica albuginea is incised so as to release tension inside the testis. Though usually advised, we have not used a cruciate incision. Allow fluid to escape and relieve pressure are the guiding principles.

Four years ago, fully realizing the danger of using ketosteroid preparations in acute virus infections, we felt that cortisone might be of some assistance in treating mumps orchitis because of its great anti-inflammatory effect. For some time, we played with the dosage, attempting to establish an optimum schedule. Today, after wider experience with many cortisone-treated cases, depending upon the size and weight of the patient, we give an initial oral dose of 300 to 400 mgm. of cortisone at once. This large loading dose is very important: smaller doses accomplished nothing. With increasing experience, following the initial 300 to 400 mgm., we have learned to give 100 mgm. of oral cortisone every 6 to 8 hours until all swelling, pain and fever have subsided. Here again, the size of the patient and urgency of the case will be the guide as to the frequency and quantity of the drug given, rather too much than too little.

Since the above regimen has become established, dread with which we formerly approached these cases has disappeared entirely. Euphoria is usually established in 8 to 12 hours and

the objective quantitative improvement becomes complete in 24 to 76 hours. We no longer call in the consulting urologist to incise the testis in these cases; surgery is no longer necessary. In this connection, however, I should not hesitate for one second to incise a neglected late case of orchitis if the same were indicated in the attempt to save surviving tissue from death by hydraulic pressure. We feel that cortisone therapy is a great step forward in the treatment of this dread complication and we are very happy to find that our experience is being widely duplicated in other large communicable disease centers throughout the nation.

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DIAGNOSIS AND MANAGEMENT OF COMMON GYNECOLOGICAL PROBLEMS

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TRICHOMONAS VAGINITIS

AMONG the most common causes for vaginal discharge often associated with vaginitis are those due to either trichomonas or monilia (yeast). Clinically, trichomonas vaginitis is characterized by a yellowish, bubbly malodorous discharge, often associated with itching. The vaginal wall may be injected, only slightly, or even up to an angry red, and tender and painful. Indeed, trichomonas vaginitis may produce acute, painful distressing symptoms. The causative organism is the parasite, trichomonas vaginalis, and is easily identified microscopically, in a hanging drop made from a slight amount of discharge mixed with a drop of warm normal saline or water. The parasite with its characteristic flagellum or tail can be seen swimming about, as a rule.

In combating this condition, both the prophylactic treatment and reinfection sources must be considered, as well as the active treatment. Bedpan splash, contamination from the stools, poor hygiene in general, as well as reinfection from the male's prepuce, urethra, or prostate, or from her own Skene's ducts, urethra or rectum. The active treatment starts by cleansing the vagina with a liquid made up of one tablespoon of a 20 per cent sodium caprylate solution to one quart of water. The same mixture is used as a douche nightly, followed by vaginal insertion of a suppository of milibis (15 per cent arsenic and 42 per cent bismuth). Twice weekly, milibis powder is insufflated in the office, via an open speculum. Treatment is carried out throughout the month, including the menstrual period.

YEAST (MONILIA) VAGINITIS

Yeast vaginitis is caused by the monilia organism, and is characterized by patchy grey-white flecks that cover a slightly injected or sometimes bleeding underlying mucosa. Itching

and discharge are usually present.

It has often been said that trichomonas vaginitis resembles the strawberry tongue of scarlet fever, and yeast vaginitis the throat of diphtheria.

Using 10 per cent sodium (or potassium) hydroxide as the hanging drop solution, the characteristic yeast structure with its branches and buds is easily noted.

The caprylate treatment of yeast vaginitis has been very successful. At the initial visit the vagina is cleansed with a solution made up of one tablespoon of 20 per cent caprylate solution to one quart of water. At home the patient douches nightly with a similar solution, followed by intravaginal insertion of caprylate ointment. Twice weekly caprylate powder is insufflated, in the office.

ELECTROCAUTERIZATION OF THE CERVIX

The electrocautery is paramount for the treatment of chronic endocervicitis, with or without erosion. Clinically this condition is characterized by a white mucoid discharge, annoying as a rule only because of its presence. Before simple cervicitis and erosion are diagnosed, the patient's history is carefully evaluated, and a cytological cervico-vaginal (Papanicolaou) smear, and/or biopsy is taken in order to rule out possible carcinoma of the cervix. The following general principles, only if adhered to, establish the justifiable term "simply cautery":

1. Cauterize the patient about one week post-menstrually. This is the optimum time because the immediate post or pre-menstrual vascularity may lead to possible hemorrhage. We have seen this complication several times, and one patient required as many as three blood transfusions.

2. The color of the electrocautery tip is maintained at a dull cherry red as observed in ordinary room light, not under the spot light. Too hot a tip causes deeper burns, more slough,

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greater chance for bleeding.

3. To minimize possible vaginal burns, the "cold cautery" is used. The tip is dipped into cold water before being applied to the cervix.

4. Every cauterization consists of a canal cautery, regardless of whether an erosion, eversion or ectropion are also present or not. The canal cautery is done first, cauterizing the entire length of the canal up to the internal os. Next, the red, eroded area is touched up by the electrocautery tip.

Douching and intercourse are forbidden for two weeks in order not to interfere with the slough and cause possible bleeding. During this time there is usually an increased discharge, often foul-smelling; the patient is told about this in advance. Douching with a mild acid solution is allowed after the second week.

5. The cervical canal is kept open by weekly dilatation. This is important, and prevents scarring and stenosis with its possible complication of leucometra, or pyometra, or hematometra. A simple cotton applicator dipped in 10 per cent silver nitrate or negatan solution often suffices.

It takes about six to eight weeks for complete epithelialization. Never recauterize before three months. A cervix that continues to bleed after cauterization may also have had (a) too deep and too hot a cautery. (b) cervix was acutely infected. (c) recauterized too soon after recent cautery, and (d) possible associated carcinoma of the cervix, previously undetected.

VAGINOSCOPY

The vaginoscope has been brought to light recently because of its practical value in detecting and assisting in the removal of foreign bodies of the vagina. Especially has this been of use in cases of unexplained vaginal discharge in the young female child. When an x-ray does not clearly reveal whether the foreign body is in the bladder or vagina, vaginoscopy may be the answer, and also the retrieving instrument. An otoscope with a properly shaped speculum piece is very adaptable for this work.

CYTOLOGICAL SMEAR FOR CARCINOMA OF THE UTERUS

One of the most recent advances in detection

of early carcinoma of the uterus — particularly of the cervix — can be attributed to the cytological (Papanicolaou) smear method. A cervix with an erosion or even a cervix that looks normal, cannot be definitely labeled as one that does not seat a squamous cell carcinoma. There are too many instances where an innocent looking cervix or a mild erosion was already the site of an early squamous carcinoma. Whether a smear or a biopsy is taken matters not. It is important that some form of screening be used. The cytological smear can be easily performed in the office and because of its non-surgical and painless approach, may perhaps be the one of choice for screening. Materials needed are: (a) fixative which is usually in a bottle, consisting of equal parts of 95 per cent alcohol, (ethyl or isopropyl), and ether. (b) means of obtaining the smear, such a wooden spatula, cotton swab, or anything that might be available or practical for the purpose, and (c) slides. Preferably, the patient does not douche. We attempt to obtain material from (1) the squamocolumnar or erosio-normal junction, long known to be the starting site of early squamous carcinoma; and (2) from the external os; and (3) from the posterior fornix. The material is spread on two slides, being careful not to smear them too thickly or to overlay the smear, and then immediately put into the fixative. The latter is a very important point, in order to prevent the cells from drying. Frosted-end slides are practical, the name is written on the slide in ordinary lead pencil. The slides are prevented from rubbing with each other by putting an ordinary paper clip on one end.

The slides are then removed after being in the fixative for a minimum of 30 minutes, allowed to dry, wrapped in kleenex and then either delivered or mailed to any experienced cytologist. It might be mentioned that a vaginal speculum is always employed to expose the cervix unless mechanically impossible. Staining is done by using the tri-chrome stain of Papanicolaou. Reports are listed as negative, benign, atypical suspicious, malignant, or definitely malignant. The final corroboration must always lie with the histological section. A positive smear must be followed by a biopsy. It may be necessary to do a ring biopsy and get serial sections in order to detect the very early, often preinvasive carcinoma. A positive smear done by an

experienced cytologist must not go unheeded. Search by biopsy and serial sections must follow.

The very early, preclinical squamous cell carcinoma, often carcinoma in situ, is the one most important to detect. For it is this carcinoma that lends itself to, perhaps, even a cure. Every doctor's office should be a cancer detection center and when the rather commonly occurring carcinoma of the cervix, so important because of its devastating pathogenic nature, can possibly be detected by a routine screening, it may be reiterated — "Routine smears might be the answer."

A MOST IMPORTANT CONSIDERATION IN ALL CASES OF VAGINAL BLEEDING

As the underlying cause for unexplained vaginal bleeding, one must keep in mind that the disturbance may be in the blood and blood forming apparatus. Thrombocytopenic purpura has been brought to attention in just such instances. The young adolescent girl with irregular, often menorrhagic periods, is usually looked upon as having a "functional" or "glandular" problem. Yet, the underlying cause may be that of a marked thrombocytopenia, with its low or even absent platelets, large spleen, prolonged bleeding time, etc. Indeed, such cases have

occurred, gone undiagnosed, and unfortunately, expired. On the other hand, gratifyingly, if the diagnosis is made in time, splenectomy may be life saving. It may be well advised that in any meno-metrorrhagic patient, a routine platelet count and bleeding time be done, irrespective of the pelvic pathology.

MANAGEMENT OF SPASTIC, TENSE, RIGID HYMEN

In some cases the underlying cause for sexual incompatibility, especially in the newly married couple, may be due to small rigid hymen with an associated tense, spastic, perineal body. The treatment is not only excision of the hymen, but also an incision downward into the perineal body, through the base of the superficial perineal compartment and the base of the triangular ligament. With a finger in the rectum as a guide, an incision is made down to the external sphincter. It is almost a perineal repair in reverse, in that the cut edges are sutured anterior-posteriorly, thus enlarging the vaginal introitus opening. Healing is usually by primary intention and has been very satisfactory in numerous cases. This is followed by weekly dilations with a vaginal speculum starting two weeks post-operatively, and continued for about two months.



BILATERAL TRAUMATIC PSEUDOCYSTIC PULMONARY HEMATOMAS

Dermont W. Melick, M.D.,

Kent H. Thayer, M.D., and Doris M. Rowe, M.D.

Phoenix, Arizona

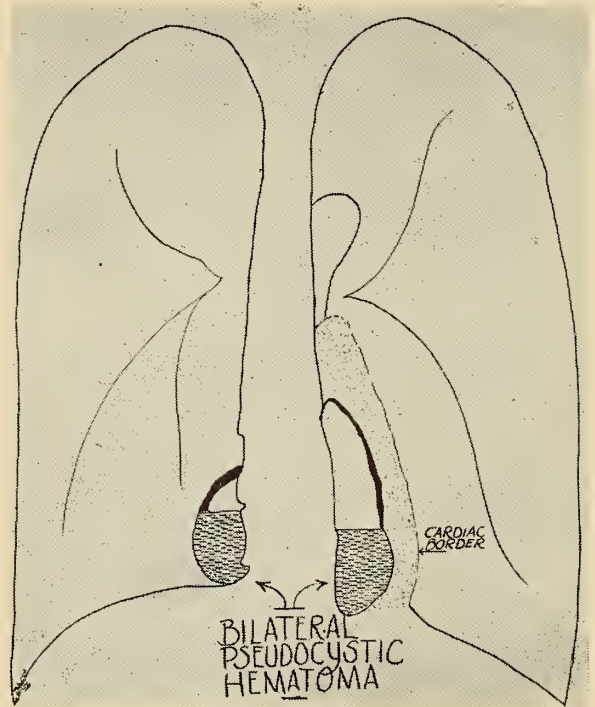
Introduction

A 47-year-old man suffered chest trauma resulting in bilateral posterior basilar pulmonary shadows. These abnormal shadows were caused by liquified hematomas. The mechanism to explain these bilateral lesions is a matter of conjecture.

Case Report

This man was working on a telephone pole 12 feet above the ground. He slipped and fell from the pole striking the ground on the flat of his back. For a few minutes he could not talk and found it hard to breathe. One hour later, he began coughing and raising blood. This hemoptysis continued for several days, but not in any great amount. He complained of tenderness under the costal margins and under the xiphoid. Chest and upper abdominal discomfort were particularly noted when turning over in bed. All of these symptoms subsided gradually. He was unaware of any difficulty in swallowing. He did not have any fever. His past history revealed occasional bouts of asthma. A chest x-ray taken in 1951 had revealed minimal emphysema, but there was no evidence of any pulmonary parenchymal lesions.

Physical examination revealed percussion tenderness over the 10th thoracic vertebra. The aeration of the left lung was satisfactory. At the base of the right lung there was definite suppression of breath sounds and an occasional expiratory wheeze could be heard. There was



tenderness over the xiphoid and along both costal margins.

Chest x-rays revealed bilateral cyst-like shadows close to the spine in the posterior mediastinum. These were partially filled with fluid. Diagnostic studies included an esophogram and a gastro-intestinal x-ray series, planigraphic study of the posterior mediastinum, bronchoscopy and lipiodol bronchogram. These studies were helpful to the extent that the planigrams revealed these cystic shadows to have their origin in either lung with no evidence of communication between the two cystic shadows. The radiologist who studied these x-rays suggested the following differential diagnoses: (a) enteric cyst of the mediastinum, (b) bronchial cyst, (c)

mediastinal abscess, (d) loculated mediastinal hematoma, (e) emphysematous cyst with intracystic hemorrhage and (f) hiatus hernia.

An exploratory thoracotomy was carried out for diagnosis and the cyst-like lesion on the left was removed. It was located within the medial basilar posterior section of the left lower lobe. The lobe could be freed from the mediastinum without difficulty. The cyst-like area was opened and found to contain a thick brownish fluid. This area of the lung was resected and sent to the laboratory for examination. The pathological report was as follows: "The cyst wall is made up of collagenous, fibrous connective tissue with some fibroblasts. There are also some areas in which there are macrophages containing brown pigment which is probably hemosiderin. The lung tissue which is attached shows some congested and pigmented intra-alveolar macrophages."

The patient's post-operative course was un-

eventful and his x-ray just before discharge was reported as follows: "The cyst on the left is no longer visible. The cyst on the right has decreased approximately 50 per cent in size." Subsequent films revealed that the cystic area on the right completely disappeared in six weeks.

Discussion

In order to explain these bilateral pulmonary shadows in this particular location, it is necessary to postulate some mechanism whereby such localized trauma might have been accomplished. At the time of the fall, the heart was thrown forcibly backward and acted very much like a pendulum. This resulted in a "black-jack" type of injury to both lungs. Considering this supposition to be true, the heart then crushed the lungs against the spine. This caused a hemorrhage in the posterior medial base of each lung with resulting hematoma. This was followed by central liquefaction of the hematoma and the formation of pseudo cysts.



The President's Page

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ARIZONA MEDICINE

Journal of

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VOL. 14

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

8. Illustrations — Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.

9. Reprints — Reprints must be paid for by the author at established standard rates.

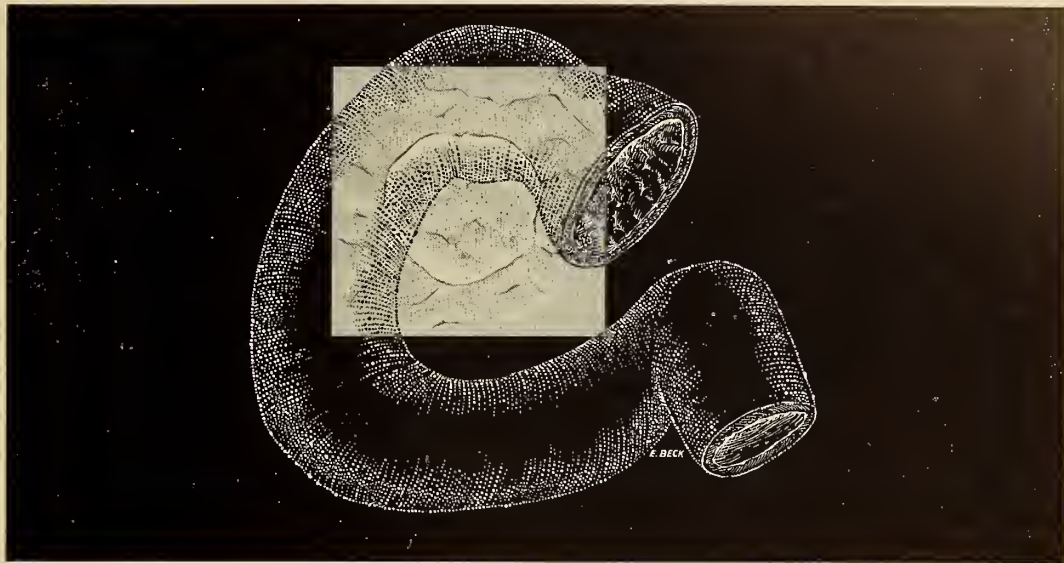
The Editor is always ready, willing, and happy to help in any way possible.

INTERNISTS — ARISE

IT might as well be faced! — that brave little group who a few years ago banded together as the Arizona Society of Internal Medicine is really just a bunch of chauvinists. The traces of attrition are everywhere manifest. No sooner did the thinking moiety of the medical profession in Arizona arrange a trivial token raise in the fee payable for in-hospital medical care than the surgeons, sometimes irreverently referred to as the chopping bloc, began clamoring for a bigger cut. Then from the fringes came the menacing procession of the gas mask gang, the shadow boxers and that unctuous order which dwells in the tules and fattens in its feral trade. These elements already rich beyond the ultimate fantasy of the little internists cry for more and yet more bites of the mites.

The recent rumor of a deal negotiated between a labor union and a medical clinic in Arizona is to the point. For the sake of anonymity the dealers will be known as the Contour Sheet Material Workers Union and The Phoescon Clinic. The union seeks the bestest and mostest for the leastest — natch! The clinic wants a "grabholt" on all this promising new business — natch! So the clinic meets the demand for thorough history and physical examination *at the internist level* plus a standard x-ray film of the chest plus complete blood count and urinalysis plus a serum test for syphilis — all for the sum of \$20.00 per package. Now let's sort out the contents of this package and price it in terms of relative value units. The radiologists list a standard chest film as 2 units. The pathologists list a blood count as 1 unit, a urinalysis as 0.4 unit, a serological test for syphilis as 0.5 unit. Remember these are basic units, applicable to Medicare patients for instance. All right, let's add up the items we have so far priced *in units* and the sum is 3.9 units. Cheap enough! Now let's convert units to dollars; the conversion factor for both radiologists and pathologists in Arizona is 5, i.e., one unit is worth five dollars. So it works out for anyone who can multiply that the Contour Sheet Material Worker gets his x-ray and lab. work for \$19.50 and the Phoescon Clinic

(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

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Research in the Service of Medicine.

1. Lichstein, J.; Morehouse, M. G., and Osmon, K. L.: *Am. J. M. Sc.* 232:156 (Aug.) 1956.

2. Sun, D. C. H., and Shay, H.: *Arch. Int. Med.* 97:442 (April) 1956.

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4. Schwartz, I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: *Gastroenterology* 25:416 (Nov.) 1953.

5. Silver, H. M.; Pucci, H., and Almy, T. P.: *New England J. Med.* 252:520 (March 31) 1955.

SEARLE

has fifty cents left from the double sawbuck the union paid. Now the problem is one of ethics; shall the Clinic pay the internist that whole fifty cents for his hour of history and physical examination (and anyone who thinks a proper history and physical examination *at the internist level* can be done in much less than an hour is a — is a — well is *not an internist*) or shall Phoescon Clinic hand the fifty cents over to administration as part-payment of advertising costs and then the internist could save face by working gratis. Just think of the savings in income tax!

The Illinois Medical Journal in its April 1957 issue appeals to the American Medical Association to request all insurance companies writing medical-surgical coverage to provide medical payment for concomitant medical care. Ha! Once upon a time in the memory of this editor hand holding during induction of anaesthesia was an honorable source of income. Spitting in the wound was usually forbidden but kibitzing was allowed — of course at a specified distance from the hallowed zone. Nowadays it is assumed that all internists wear woolen pants and nylon drawers and are ipso facto "high explosive". Yellow lines are drawn on the floors of operating rooms. In order to cross the red line the internist is required to repair to the dressing room, strip to the skin and don the habiliments; reasonable enough where safety is at stake. But one major hospital in Pima County has really fixed things for the internist: keys to the dressing room are issued only to surgeons, generalists, anaesthesiologists, roentgenologists and pathologists.

This flagrantly un-American discrimination is defended by the key-holders with specious arguments about sanitation but their perfidy is transparent. The war is on! C.L.R.

INTERNISTS, — Schmininternists — arise!

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VA USING NEW REHABILITATING TREATMENT

A TREATMENT devised to rehabilitate severely disabled older patients is producing promising results, Veterans Administration reports. Patients were victims of strokes, hardening of the arteries, arthritis or multiple sclerosis. After receiving maximum benefits from medical and surgical treatments, they were placed in special rehabilitation wards where an individual program was planned for each, under direction of a psychiatrist. Among other treatments, physical and corrective therapists used exercise to restore the patients' strength and coordination. At one hospital 50 of the 60 aged patients progressed enough to be discharged; at another 25 of the 130 left the hospital for jobs, 40 others were discharged, and 55 showed worthwhile permanent improvement.

EISENHOWER SIGNS REVISED DOCTOR DRAFT BILL

THE revised doctor draft bill has become Public Law 85-62; it was signed by President Eisenhower June 27, four days before the expiration of the old doctor draft law. Under the latter, some 10,000 physicians were called up for two or more years of service, starting back at the time of the Korean war. The new law provides for the selective call-up of physicians and dentists to age 35 if they were deferred from the regular draft at any time after June 1951, in order to complete their professional training. The law is effective for two years, expiring at the same time as the regular draft. Defense department estimates that the 2,200 physicians required by the services this fiscal year will come from volunteers.

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Topics of Current Medical Interest

RX., DX., AND DRS.

By Guillermo Osler, M.D.

WE talked to Dr. John Z. Bowers in the middle west in June. He's the former Dean of Medicine at Salt Lake City, now in the same job at Wisconsin. . . . He has recently turned down a huge job in the east; inspected the medical facilities for one of the southeast Mediterranean countries; and before that had LOOKED OVER THE ARIZONA POSSIBILITIES FOR TEACHING MEDICINE. . . . We haven't seen a report of that last-mentioned survey, but we have a quote which wasn't said to be restricted, — "Since my visit to Phoenix I have had no further direct contact with the possibility of Arizona medical education. I personally would like to see them go ahead with a two year school, and from many standpoints Arizona would seem more appropriate than New Mexico." . . . The two-year idea is less dramatic than four years, but is logical as a start, allows the way to be prepared for clinical teaching, and by the time hospital services become necessary the size of Phoenix (or Tucson) will be large enough to swing it.


Speaking of medical education, do any of you medium-old codgers remember a famous Yale-Harvard football game, with two famous players, Albie Booth and Barry Wood? . . . Barry Wood was teaching medicine before he graduated, a Professor in St. Louis within a couple of years, and is now Vice-President of the Johns Hopkins Hospital and University. . . . He is author of the first notable change in curriculum in 25 years; the sponsors (for \$10,000,000) are the Rockefeller Foundation, the Ford Foundation, the Commonwealth Fund, the U.S.P.H.S., and certain private sources. . . . Selected candidates of "adequate motivation and maturity" will be permitted to enter medical school after only 2 years of college. They will then take a 5-year course in medical school, with continued studies in liberal arts (+ medicine) in the first three years, at which time they will get a B.A. degree. The last year of the 5-year course will be combined with the first year of internship in the J.H.Hosp. . . . Those who enter after 3 or 4 years of college will begin studies in the second year of the 5-year course. . . . This seems to be a big "swuther" over a change which isn't so radical after all. The duration is about the same; the academic year is to be 40 instead of 32 weeks, (except the fifth year, which is to be 50 weeks); and the distinction between top students and us others is a distinct shock, — we thought they only took the cream at Hopkins in the past!

Peter Fisher, a Contributing Editor to the Current Medical Digest (one journal of which Dr. Alvarez is NOT the editor) writes on 'THE BOWEL MYTH'. . . . He really tears apart the advertising campaigns, the quacks, the M.D.s, and the general public for either stressing the need for laxatives, colonics, and 'smoothage', or for going along with the gag. 'Proper elimination', 'irregularity', 'prevention of constipation', 'avoid drastics, use simple laxatives', 'dropped intestines', 'bowel habits', 'daily stools', and 'logish, with headaches' are terms which are gobbledegook and anathema to him. . . . He says that "auto-intoxication" was killed by Alvarez (that man again) years ago. . . . The situation should be explained to the patient, or he/she may need a bowel education program. The prevention of fecal impaction is a real need when a patient is suddenly at bedrest with constipating medication, but he doesn't have to be heckled by one and all about bowel movements. . . . The investigation which should follow a patient's complaint that he doesn't have daily movements is not as easy as prescribing a laxative, but it is in the same class of lethargy which results in the prescription of penicillin for a simple 'cold' rather than explaining its uselessness.

Shortly after this paragraph reaches print (and it only takes 4 to 8 weeks), we will be approaching the time for the 'DIABETES DETECTION DRIVE', in the second week of November. . . . Ten years ago Dr. Hugh Wilkerson of the U.S.P.H.S. decided on "random urinalysies" of the public to find the unknown diabetics. There are a million known diabetics, and about a million undiscovered cases. . . . No one knows how many people are tested, but it calls attention to the plan, and more people are saying, as a chief complaint, "I was found to have sugar in my urine in the Diabetes Detection Drive". An onset with symptoms, and especially with coma, is quite rare. . . . When glycosuria is found, the family physician has to fill in the picture. About 40 to 50% of glycosuria is not due to diabetes, and will have to be ruled out, lucky people. The quickest way to exclude the disease is a blood sugar test taken 2 hours after a heavy carbohydrate meal.

Therapy for CANCER OF THE THYROID looks better since a report by Catz, Starr, and Schwartz of Los Angeles. The patient's thyroid is removed; he is given RADIO-ACTIVE IODINE in a carefully guided program, preceded by a dose of TSH;

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he is given ample thyroid hormone to keep the pituitary from secreting TSH; and he is required to be examined at intervals of a month to a year. years, which was the start of the program. Of . . . Cases have been controlled for as long as seven the 85 cases in their series, 45 have shown no spread of the disease, 15 are living after metastases have occurred, and 25 have died.

Dr. Hugh Hare of the Los Angeles Tumor Institute has given us some unpublished figures on the use of **RADIO-ACTIVE MATERIALS** for **CANCER** (mostly metastatic) of the pleural spaces. . . . In general the substances do not cure the lesions. In general Dr. Hare prefers radioactive gold to radioactive chromic phosphate. In general an instillation may cut down the speed of fluid formation, and this may be a factor in care. (We agree, having recently had 4 cases at one time. Aspirations can lose their novelty when the need becomes a daily one).

Hospital Topics had two items in the same issue which tie up with some dramatic medical affairs of about 20 years ago. One of the items was a description (on the Buyer's Guide section) of a **PORTABLE RESPIRATOR**, a 'cuirass' type which fits around the chest, and is sold by the J. J. Monaghan Co. . . . The second item was the report of an exhibit by Dennis R. Scanlon Jr., Inc. of imported Swedish surgical instruments at a Hospital Association convention. . . . The connection occurs thru a famous internist and hematologist ('The Leukemias') **DR. CLAUDE FORKNER** of New York. He had stayed over in Peiping, where he had just finished a 5 year teaching stint at P.U.M.C., to care for the famous polio patient (and now 'late') Fred Snite. By the time he got to the States he had invented a chest respirator, was visited by Dennis Scanlon, went to Sweden to confer with people there who had a chest respirator, and very soon dropped the whole idea because of obstacles and controversies. . . . There were two other angles of slight interest, — Scanlon had introduced Sonia Henie to this country, and Dr. Forkner had described the whole situation (by chance) to this Osler who (by chance) had been working on the possibility of cuirass-type chest respirator! . . . The number of medical procedures Dr. F. did to save Snite's life in China was amazing; he could hardly have been treated better right now in an American Hospital. No wonder Dr. Forkner has been called to see such people as Senator Taft, Gertrude Lawrence, the King of Iran, and hundreds of other celebrities.

The **FORD FOUNDATION** deserved, and was given, a big vote of heartfelt gratitude for their huge gifts to hospitals last year. . . . We shouldn't let the chance pass to do it again, when the second half of the \$200,000,000 in donations was recently distributed. Terrific! Amazing! Wonderful! . . . We know of a small hospital which has used the

funds to completely renovate the heating system, get new metal-and-plastic folding chairs, get new Venetian blinds, hire the services of a 'nursing expediter' and a part-time medical director, buy a new incinerator and 40 portable evaporative coolers, and pay part of the costs of a small assembly-room for patients, nurses, and staff. . . . How many of these things would have been obtained without Ford Funds? Would the hospital have been stimulated to Accreditation as it was?

The National Health Institute (Bethesda, Maryland) has reported the possibility that **SEROTONIN** may be one of the causes of **ASTHMA** and other **ALLERGIC CONDITIONS**. Serotonin and histamine are found in tissues, and the amount is greater after anaphylactic shock. . . . Dr. Waalkes and his colleagues are working on various experimental situations where they can measure serotonin; its effect, its antagonists, and the enzymes which destroy it. It is known that reserpine releases all bound serotonin, which may be a start.

Few people should be able to peer into the **FUTURE OF CARDIO-VASCULAR DISEASES** without a crystal ball as successfully as Dr. Irvine Page of the Cleveland Clinic Foundation. He **FORSEES SEVERAL MAJOR ACHIEVEMENTS** in that field in the next ten years, namely, — 1. A highly effective chemical control of hypertension. 2. A decline in the incidence of rheumatic fever. 3. Discovery of the causes of chronic nephritis. 4. Finding better clues to therapy for arteriosclerosis. 5. The answer to the riddles of brain chemistry and function. . . . See if **YOU** can figure the future from the present leads.

Mary Giffin, M.D., of the Mayo Clinic writes about an obscure topic '**PSYCHOPHYSIOLOGIC GYNECOLOGY**', in the Journal of Michigan State Medical Society. She quotes Ziskind, who has said, "I stress what is common to most psychiatric thinking, namely that the needs of human beings, when frustrated, result in personality conflicts; that the process of social adaptation is universal, but often unsuccessful; that early life conflicts endure; that persistent conflicts may crystallize into character patterns; that unresolved conflicts may crystallize into character patterns; that unresolved conflicts may be transmitted into symptoms of organic illness through the autonomic nervous system. These do not explain all psychopathology, yet they suffice as a set of working premises." . . . She herself says, — "If early emotional conflicts have led to insecurity about the feminine role, or indeed bitterness about being born a woman, the pelvis and its organs are particularly adapted to the expression of such feelings. In no other specialty are the psyche and the soma so naturally suited for the expression of the unresolved problems of infancy, social adaptation and sexuality as they are in gynecology. Particularly, the

poorly integrated dependency and psychosexual problems of the adult woman find a natural outlet in pain, abnormal function or tissue changes in the pelvis and its contents". . . . These logical statements make one wish for more time, to learn more, to help more.

We asked a friend from Denver, internist Giles Filley, and one from Albuquerque, surgeon Joe Gordon, **HOW TO EXPLAIN EMPHYSEMA TO A PATIENT AND FAMILY** so they will understand it. They admitted that it was difficult, but suggested the following routine, — 1. Really work at the job of explaining. 2. Show them inspiratory and expiratory films of normal and emphysematous chests. 3. Have group sessions, with questions and answers. 4. Make wire recordings for repetition (and to save your time and voice). 5. Try to put across the idea that "the lung does not comply", tho using such words as 'respond', 'cooperate', 'react', etc. . . . Sometimes nothing works, and the patients would rather grasp at straws.

Inadvertently, Dr. K. C. Baker and his son, Rusty, were listed in the April issue as residing in Phoenix. An unfortunate mistake, for we have no desire to move Dr. Baker and Rusty to the capitol city.

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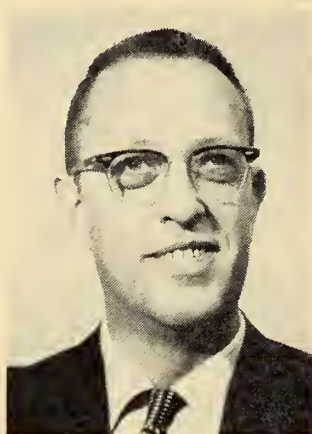


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Organization Page

CIVICS

Norman A. Ross, M.D.

"SURVEY OF ONE HUNDRED CASES OF WHIPLASH INJURY AFTER SETTLEMENT OF LITIGATION"*

NICHOLAS GOTTEN, M.D., MEMPHIS, TENNESSEE

(One hundred patients with previously diagnosed cervical neck strain following auto accidents whose litigation on compensation claims had been settled were queried as to their present clinical status. After legal claims for damage were completed, 88 per cent showed recovery, and over half of these had no residual complaints. Many emotional factors, but especially those concerning monetary compensation, greatly confuse proper medical evaluation and appear to be the cause of the wide divergence of professional prognostic opinions relative to this particular injury.)

A reprint of the above paper was sent to me by one of the one hundred or more insurance adjusters in our state, who was introduced as an officer of their association at their annual dinner.

If you haven't read this paper may we recommend that you do so before you make a diagnosis of cervical strain, cervical dislocation, cervical fracture, or if you prefer the homey terminology "whiplash injury".

PHOENIX FIELD STATION SECTION

The following quotes from a letter received March 1, 1957, really excited some of we ARIZONA MEDICAL SCHOOL proponents.

"Thank you for your inquiry and interest in our Field Station activities and in the proposals for its relocation.

"As you may recall, this unit and two preceeding ones of the Public Health Service (headquartered at the Communicable Disease Center, Atlanta, Georgia) have been working in the Phoenix area since 1949 on fly control, diarrheal disease and polio studies. Some of the studies on polio by Drs. Walton, Melnick and Prindle are now in press and should be available in the near future.

"The present studies have been concerned with the diarrheal diseases using Sacaton and Guadalupe as long-range study areas. They have been directed principally toward a better understanding of the etiology and control of the causative organisms backed by thorough clinical workup of patients at the Pima Indian Hospital at Sacaton. A part of the research has been concerned with reduction of vectors, such as flies and roaches, associated with municipal refuse disposal. We are now able to convert municipal refuse consistently to a high-grade humus resembling peat moss that is suitable for soil conditioning, and have about completed a plant at Chandler to demonstrate the practicality of the method.

"We have recently been advised by Dr. S. W. Simmons, Chief of our Branch, that he anticipates a consolidation of our research with that going on at Prestonsburg, Kentucky, in the near future and that he would like to locate the combined unit somewhere in the arid Southwest. In addition to diarrheal disease and composting studies, he would like to do some work on the toxicology of pesticides, particularly the agricultural insecticides. The consolidated unit would have 35-40 employees initially and almost half would be professional personnel such as medical officers, engineers, biologists, chemists, etc. The group could work most advantageously if they were located on a College or University campus. An estimated 10,000 square feet of floor space suitable for chemistry, bacteriology, biology and offices are required. In addition, some outdoor space for a small compliment of epidemic and disaster aid equipment would be needed.

"For various reasons our immediate studies could be done best in the Phoenix area. Some of these are (1) experience and background data in the area, (2) a nearly completed composting plant at Chandler, (3) interlacing agricultural and residential areas where considerable volumes of insecticides are used (Tucson has practically none of this — Las Cruces, New Mexico does

*Reproduced from Oct. 27, 1956 issue of the Journal of American Medical Association with their permission.

have), and (4) some of our trained subprofessional personnel who would probably not move from Phoenix. I am sure that on this basis Dr. Simmons would locate the combined studies in the Phoenix area providing adequate space were available.

"We thought this aspect of the relocation problem had been solved when it looked like a former outdated dormitory on the Arizona State College Campus at Tempe might be available to us. However, following a Board of Regents meeting, Dr. Gammage informed us that the Board advised him to use the building for direct school purposes if possible. So if consideration of this building (Alpha Hall) cannot be reopened or a satisfactory alternate cannot be found, the Phoenix area will probably have to be dropped for further consideration as a location for our expanded studies."

On June 20, 1957, Dr. M. H. Goodwin, Jr., Scientist Director, Assistant Chief, Technology Branch, at the time of his courtesy call to Governor Ernest W. McFarland, announced that negotiations were complete and that the new name of what had been the Cumberland Field Station Section, Communicable Disease Center, at Prestonsburg, Kentucky, would be the Phoenix Field Station Section, Communicable Disease Center, Phoenix, Arizona.

This is what I learned about our new Health Station, for you who are interested in organization: The Phoenix Field Station Section is to be the southwestern technical laboratory of the Technical Branch of the Communicable Disease Center (Atlanta, Georgia). The Communicable Disease Center is a Field Center of the Bureau of State Services of the U. S. Public Health Service.

We can best estimate that part of the communicable disease program that will be carried out in the Phoenix Field Station Section by reviewing the assigned duties of the Cumberland Field Station Section:

(A) Plans and conducts investigations to de-

velop improved methods of control of communicable disease with special reference to enteric infections. These studies include:

- (1) Evaluation of methods for measuring prevalence of diarrheal diseases.
- (2) Delineation of etiological agents involved.
- (3) Determination of relative significance of environmental factors and of vectors on the interfamilial spread of diarrheal diseases.
- (4) Investigate ecology of vectors, reservoirs and etiological agents.

(B) On the basis of information developed, devise, apply and evaluate control procedures.

CDC — THE COMMUNICABLE DISEASE CENTER

"Foreword"

"Communicable diseases are responsible for more than 100,000 deaths each year in the United States.

"They bring pain and suffering to countless others, they severely disrupt family life, they cause school children to be absent for a 100 million school days a year, and they result in an annual industrial loss equal to \$2 billion worth of American productivity.

Thus the conquest of communicable disease is — and must be for some time to come — a major public health goal of the Public Health Service."

(s) L. E. Burney
Surgeon General

OUR LOCAL SCHOOLS?

What amount of your local school dollar is raised by county property tax? More about governmental aid to education.

Read "The Town That Lit The Integration Fuse," but particularly page 101 of this article in the June 22, 1957 issue of the Saturday Evening Post, before you commit yourself on this "local" social-economic issue.

THE U.S. COMMITTEE OF THE WORLD MEDICAL ASSOCIATION

THE U. S. Committee of the World Medical Association reported ratification of a medical

civil defense emblem for international adoption to protect civilian medical personnel in time of war; establishment of a central repository for medical credentials; and development of a library project to furnish books and periodicals to medical libraries abroad.



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THE DIAGNOSIS OF MENTAL RETARDATION

Clarence G. Salsbury, M.D.*

THE clinical facility for diagnosis of mental retardation established by the Arizona State Department of Health at 1633 "A" West Jefferson Street, Phoenix, Arizona, provides privacy as well as ample space for observation of the child. Four efficiency apartments have been easily adapted to the purpose of providing a reception and waiting area, individual conference rooms, an examination room, and a small library space.

Applications are received from the parents or legal guardians. The child cannot be older than eight years of age. The emphasis is on early case finding. The diagnostic services are designed to help parents give the best possible guidance and care while in the home and community. The diagnosis must be based on all available evidence as to the child's potentialities, whether educable, only trainable, or completely dependent.

The application contact is followed as promptly as possible with a conference of both parents, the child, and the psychiatric social worker. This contact may be made at the home. Usually it is held at the Child Development Center.

The length of the waiting list is increasing, but this is due primarily to an unbalance in the hours of service of the clinical staff members.

The child returns to the clinic for a complete medical examination. The pediatrician determines what laboratory services are to be accomplished. X-rays must be indicated. Blood and serum findings, urine study for diacetic acids, protein bound iodine, and sugar. Electroencephalogram may be required.

Special consultant services are provided in accord with the medical examiner's recommendations. These include neurology, ophthalmology, otolaryngology, and orthopedic evaluation. Special audiology and special evaluations may also be required. Psychological determinations have been done routinely on all children admitted for observation. This may not necessarily follow in the future as experience of the pediatrician may prove adequate in making his own evaluation of the mental capacity of the child. He will then request psychological studies only in the more difficult differential diag-

nostic situations.

The individual services of psychiatric social worker, pediatric clinicians, the psychologist, and the laboratory and consultant take approximately six weeks to complete. There then follows one or more case conferences in the instance of each child. It is here that recommendations are made for the immediate future of the child. If at all possible, the child's private physician and the referring individual or agency is present at the case conferences. The jurisdictional public health nurse may be present. A representative of a resource agency may be invited to be present. At this time it is concluded whether the child is a mental retardate, whether there is evidence of emotional or physical causes for retardation, or if there are combinations of these.

At the time of the case conference it may be determined that the mentally retarded child will need continued observation before a more reliable estimate of ability can be made. It may be that the child needs some special social training before home and community adjustment can be satisfactorily accomplished. It may be that the child needs to be given further special observations in order to evaluate the diagnostic and prognostic acumen of the staff. In any of these instances the referral is made within the resources of the staff. The observation center is established in conjunction with the diagnostic center at 1633 West Jefferson. A child development specialist is assigned to this activity and in a playroom environment provides continued study and direction in the group activities provided for the child. The length of time that the individual may be under this special supervision varies with the child's needs and the recommendations of the staff.

There can be no more than eight children in the observation center at any one time. It may be necessary to limit the number to less than eight. Several hyperactive retardates may take the total attention of the development specialist. Parents are required to observe their child in this supervised activity. The specialist confers with them on the follow-up at the home and community level.

The interest of the staff in the mentally retard-

*Commissioner of the State of Arizona Department of Public Health.

ed child does not end with the diagnosis. The child's continued medical care is of priority importance. The parents are advised to seek the services of such resource agencies as are deemed desirable. Medical care is not the function of the Child Development Center. The parents and the child's regular physician will determine the future medical care program. Special psychiatric care must be obtained by the family from the private physician or from the guidance center as Family Society, as indicated. Other special services may be recommended. These again should be discussed with the physician in charge of the child's general medical care and plans made with the parents in accordance.

The public health department is directly or indirectly concerned with the follow-up. The public health nurse can assist the family in gauging the progress of the child in the home and in relation to the community. She can assist the parent in assuring the recommended attitudes and procedures of parent-child conduct in the home and in the community. This nurse is a line of communication between the parent and the child's physician and between these agents and the Child Development Center.

If possible the diagnostic team at the Center wants to re-evaluate the child each year for five years at least. Re-evaluation will indicate any error in prognosis. This will permit recommending changes in further follow-up training and care of the retardate. The parent-staff conference will help to evaluate parent progress in adjustments to the needs of the child and the ability of the parent to meet these needs. Re-evaluations will provide valued assistance to public schools and vocational training agencies by providing a more accurate estimate of the child's potentialities and what will be his optimum environment for achievement.

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PROPOSED PROGRAM TO COMBAT ORIENTAL INFLUENZA IN THE UNITED STATES

I. Introduction

REPORTS indicate an epidemic of influenza began in Hong Kong and Singapore in April 1957. Then, in rapid succession, almost simultaneous epidemics occurred in Taiwan, the Philippines, the Malayan States, Indonesia, Japan and India. There have been some reports of cases among U. S. military personnel in the Far East. A number of sharp outbreaks also have been reported aboard commercial and U. S. Naval vessels.

The disease is characterized by rapid onset, fever, malaise, muscle aches, coryza of 3 to 5 days' duration. In general, the attack rate seems to be about 15 to 20 per cent of the population in the affected countries. Mortality rates have been low.

Early in June, the Surgeon General of the U. S. Public Health Service called a series of meetings at which representatives of the medical and public health professions were invited to give advice with respect to preliminary plans for dealing with the influenza epidemic should it become widespread in the United States. On June 26, representatives of the American Medical Association met with the Surgeon General to discuss the question of medical manpower demands and other precautionary measures in the event that an epidemic should occur.

The Executive Committee of the Board of Trustees promptly pledged the support and cooperation of the American Medical Association. It requested that a program of action be prepared and submitted to the Board of Trustees for study and appropriate action.

Subsequently, a meeting was held, July 9, 1957, at AMA headquarters in Chicago to discuss a program of action and to draft recommendations for presentation to the Board. Dr. Harold C. Lueth presided over the meeting which was attended by Dr. William H. Stewart of the Public Health Service and Dr. Madison D. Brown of the American Hospital Association. AMA representatives included Dr. George F. Lull, Dr. Austin Smith, Dr. Edward Pinckney, Mr. Leo Brown, Mr. John Bach, Mr. Tom Hendricks and Mr. Frank W. Barton.

II. Summary of Data Reviewed and Factors Considered

The current status of the influenza epidemic has been discussed in an editorial entitled "Oriental Influenza Epidemic" JAMA 164:974, June 29, 1957; Public Health News release, JAMA 164:1136-7, July 6, 1957, and in a news release of the Public Health Service of June 10, 1957.

Through the Public Health Service and the World Health Organization, reports of the disease, worldwide, are received daily. Regular weekly reports, morbidity and mortality, reflect the current situation. There are several reports of influenza occurring in military bases in the Continental U. S. Also, some reports of influenza epidemics have been suggested in civilian communities. However, they have not been substantiated by virus identification.

A brief summary of the influenza epidemic characteristics includes:

- (a) Infective agent — virus Japan 507 of 1957
- (b) Incubation period — probably 1-2 days
- (c) Incidence — variable, figures not entirely reliable — 15-20 per cent.
- (d) Contagious period — uncertain, 1-5 days
- (e) Transmission — droplet infection
- (f) Symptoms — fever, prostration, headache, lassitude
- (f) Signs — coryza
- (h) Course — generally short duration, 3-5 days
- (i) Complications — rate, not serious except in the very young, old or those debilitated
- (j) Treatment — no specific therapy, usually symptomatic; antibiotics of little value; good nursing care
- (k) Mortality — figures unreliable, probably quite low except in the young, old or those debilitated

There are inherent problems in attempts to draw conclusions from the influenza epidemics of the Far East and its appearance in the Continental United States. In the Far East where overcrowding, malnutrition, insufficient sanitation and presence of other human diseases are prevalent, the situation differs from that in the United States. The appearance of the disease among United States military personnel cannot be used, without modification, in forecasting probable effects among civilian communities and personnel as factors such as earlier immunization of military personnel with influenza vaccine,

strict military control, regular sick calls, ready availability of medical and hospital care have their influence on the disease. Experiences in the Far East among military and civilian personnel are, however, the only guides that are currently available.

Consideration must be given to the medical, economic, and political impact of any epidemic that appears suddenly and attacks 15-20 per cent of the population. The AMA would do well to have sound medical plans and an effective organization to meet the medical aspects of an influenza epidemic. The rapid onset of the epidemic makes it mandatory to have plans prepared well in advance and to see that local medical societies are cognizant of the magnitude of the problem prior to the occurrence of the epidemic. It is evident from experience gained in poliomyelitis outbreaks that the public looks to the medical profession and the Public Health Service for leadership in these emergency situations. It is imperative that the AMA have a plan that is flexible enough to cope with a quick-spreading influenza epidemic. The plan must be realistic and suitable for implementation by state and local county medical societies.

Reports indicate the degree of prostration is such that patients become bedridden within a short period of time. In the military, the majority of patients were hospitalized. Among civilian groups, greater reliance must, of necessity, be placed on home care as the current high occupancy rates in civilian hospitals does not permit large numbers of influenza patients gaining admissions to hospitals. Special situations would develop in civilian groups if the disease occurs in camps, large meetings, or assemblies as too frequently there are not adequate reserve facilities available for providing bed care for large numbers of patients who suddenly become ill. Each community should make a serious study and have suitable plans to cope with epidemics that might occur.

The use of vaccine in an influenza epidemic poses many problems. There may be difficulty in obtaining a large enough quantity of vaccine of this specific strain early enough so that it may be administered in sufficient time to evoke an adequate protective antibody response. There is question as to type specificity of vaccine. There would be difficulty in administering the vaccine depending upon public and professional acceptance. If it were a mild influenza epi-

demic, it is quite likely that the medical profession would find it difficult to use the supply manufactured. If it were a sudden large-scale epidemic, there would be a great clamor for the vaccine at a time when the epidemic is at its peak and when the vaccine would be the least effective. This would present a difficult problem. Method of control of the vaccine would present all of the problems encountered by the distribution of the Salk poliomyelitis vaccine.

Antibiotics are generally agreed to be ineffective in virus infections. It is felt that there would be a certain amount of public demand for the use of antibiotics in influenza epidemics. Since it is well known that primarily influenza infections often are followed by secondary bacterial infections, a degree of justification in the use of antibiotics can be advanced.

In addition to the resources within the Association there are a number of other resources available. The Surgeon General of the Public Health Service has pledged the resources of the Public Health Service to the AMA in the matter of furnishing information and assistance preceding and during the period of an influenza epidemic. These include: technical reports giving incidence rates, nationwide and worldwide; resources for the isolation and identification of infecting agents; sending of special epidemiologists to areas upon request for studies in the spread and control of epidemics; assistance to the state and local committees upon request for augmentation during an influenza epidemic.

The Department of Defense can be requested to furnish information concerning its experience in influenza cases among the military personnel and in their clinical handling of these patients. The Commission on Influenza of the Armed Forces Epidemiology Board has made continuing studies on the problem of influenza and could be requested to furnish specific information. The World Health Organization has a steady flow of information on reported influenza cases as they occur throughout the world.

III. Assumption as to Alternate Courses Epidemic May Take

Based upon the foregoing information reviewed by the study group on July 9, it appears that should an influenza epidemic break out in the United States, it would take the following alternate courses:

(1) Few minor sporadic outbreaks this summer but disappearing without large-scale epidemic;

(2) Explosive outbreak of influenza in the summer of 1957 (before September 1) with same attack rate and mortality rate as currently exists;

(3) Few minor sporadic outbreaks this summer with explosive outbreak in fall or winter of 1957 (after September 1) with same attack rate and mortality rate as currently exists;

(4) Explosive outbreak in fall or winter with high attack rate and high mortality rate (similar to 1918).

IV. *Recommended Program of Action for AMA*

The study group believes that the American Medical Association should provide the leadership in formulating an appropriate informational and operational program to acquaint state and county medical societies, as well as the general public, of the possible outbreak of a rapidly-spreading type of influenza in the United States. The rapid onset of this influenza makes it essential to inform medical societies of the magnitude of the problem well in advance and to encourage the development of plans prior to any outbreak. Too little and too late could be disastrous, even though it is recognized that some portions of the program may never be used.

It is therefore suggested that the Board of Trustees give consideration to adoption of the following courses of action:

A. *Informational Phase*

(1) Immediate publication of a series of articles in the AMA Journal informing the membership of the nature and extent of the current influenza epidemic in the Far East. These articles should provide scientific data so that influenza cases may be recognized immediately and properly treated.

(2) Publication of a report in the AMA Journal from the Council on Drugs concerning therapy and use of antibiotics in influenza cases.

(3) Publication in the AMA Journal of articles prepared by the Public Health Service and other agencies covering the clinical aspects and current reports of the incidence of the disease. Dr. William H. Stewart indicated the PHS will provide a steady flow of information.

(4) Publicize in Today's Health and through other appropriate channels information which will reassure the general public there is no cause for alarm concerning an influenza outbreak in

view of the fact the illness is of short duration, it is generally mild and with few complications, and it has a very low mortality rate. Emphasis should be made concerning the close cooperation between the AMA and the Public Health Service and that adequate plans and operational facilities are available to the medical profession to cope with the problem.

(5) An outline plan of public information should be prepared and instituted by the Public Relations Department.

(6) Should it appear the epidemic will reach explosive outbreak, then informational pamphlets, spot radio and TV announcements should be prepared by the Public Relations Department in cooperation with the Bureau of Health Education. In turn, other phases of the program should be expanded and intensified.

B. Operational Phase

(1) Immediate steps should be taken to inform state and county medical societies of the impact of influenza epidemics on normal professional services.

(2) The AMA should suggest that state and county medical societies prepare or develop adequate stand-by programs and plans to cope with any such epidemics.

(3) In the formulation of these plans, consideration should be given to expanded professional care through the utilization of all medical personnel, regardless of type of practice.

(4) Plans should include mobilization of other professional resources such as nurses, nurses' aides, pharmacists, and others.

(5) Action to make full use of hospital facilities should be explored, such as curtailment of elective surgery, diagnostic studies, etc. The use of FCDA Emergency Hospital units might be required.

(6) Recommend that state and local programs be coordinated with public health agencies and state and local health departments. There should be close cooperation concerning diagnosing and reporting influenza cases. Joint planning may be advisable in many areas.

The Committee on Civil Defense of the Council on National Defense offers its full cooperation to the Board of Trustees in the implementation of the proposed program. The Committee maintains liaison with state emergency medical

service committees and through its other numerous contacts in the field of medical disaster preparedness, it could assist in coordinating the activities of the Association, the Public Health Service, and the state medical societies.

"INDUSTRIAL HEALTH"

William E. Shepard, M.D., Chairman,
Council on Industrial Health of AMA

AS chairman of the Council on Industrial Health of the American Medical Association, which is now 21 years old, one of our most important jobs, as I see it since I took over the chairmanship three years ago, is to try to learn what is going on in the states and to learn what you would like us to do to help you with your problems. We have a session once a year, which I think you know about, called the Industrial Health Congress in which we try to put up a pretty good program, one which will interest the chairmen of the state society committees on industrial health; and during that session we have at least half-a-day, and I think this year we will have one full day, to discuss local problems in the various states. We have a chance to let each one report briefly on what they are doing, what their problems are and others to ask questions and so forth. I don't know of anything more important that the Council on Industrial Health of the American Medical Association can do, as Doctor Hamer may agree, than to keep in step with what the problems are in the states. Briefly, we have 38 state associations which have committees on industrial health. Some are doing a very fine job in keeping pace with their problems pretty well, we learn a great deal from them. Others haven't done quite so much but probably because they haven't had so many problems; that is one of the things we'd like to know about.

And just a word, if I may, Doctor Craig, to let people know what the council is like. This is one of the councils, as Doctor Hamer could tell you, which was appointed by the board of trustees. We are directly responsible to the Board of Trustees of the American Medical Association. Our job is briefly, and I am simplifying this now with brevity, to do what we can to help American medicine catch up with the needs of industry. There are many in-

dustries, particular the larger ones, which have pretty well organized programs in health and safety and which run along very nicely. They represent approximately 15 per cent of the employers of this country, I'm talking now about General Motors, General Electric, Westinghouse, the big ones; the other 85 per cent of the employers of this country are too small, having less than 1,000 employees, down around from 15 to 25. They are too small ever to expect to have a full-time industrial physician who specializes in that field and must, therefore, and properly I think, depend upon the willingness of the local physician to put in part-time in industry helping to solve their problems. They represent about 70 per cent of the employees of the country; roughly, some 45 million. So that here we have one portion, a small percentage of the employees of the country, who have pretty good medical programs in their work-place and some 70 per cent who have little or none, depending on how much time and interest the physician is willing to put in on part-time work in industry. The council has four standing committees which I may have occasion to name later. Among these standing committees are various subcommittees which have published certain materials that have come out recently which I will mention later.

One most active committee I met with in New York during the AMA convention was on industrial ophthalmology. Now, it is amazing how little we know, how little industry knows, about the defects of eyesight in industry and about the whole problem of illumination in industry. This committee is composed of the six or seven or eight leading ophthalmologists in the country and we hope to have some material ready for you soon. We prepared a document while I was there two weeks ago on fluorescent lighting. They also corrected or approved, a corrected edition of that Snellen Chart that the AMA has been putting out. It's not so big that most any industry or school can get, which hasn't been entirely accurate and which in the 20 years that we have been distributing it, gradually deteriorated. It deteriorated because the printers weren't always as accurate as they should have been. The measurement of the letters, therefore, was not quite correct. The paper deteriorated being a little bit more gray than it should have been; therefore, less contrast. The ink deteriorated so that it wasn't

as black as it should have been, and we finally got that straightened out. The amazing thing is that over the years some 20,000 of those charts are requested by schools, public schools all over the country, and we now have to have that in better shape.

There's another committee most interesting to me on the dermatoses of industry. Doctor Dowling of Boston and a distinguished group of Dermatologists are getting out a series of seven papers and brochures, short brochures, which will be helpful to those physicians working in industry and, we hope, covering these puzzling problems of the industrial dermatoses.

There is another committee under Doctor Kehoe of the Kettering Laboratory in Cleveland which handles the problems of post-graduate training; handles the matter of graduate training for those who wish to specialize in the field of industrial medicine and who wish to prepare themselves for a board of certification which, as you know, has been recently approved by the AMA.

Another committee dealing vigorously, if still somewhat ineffectively, with the problem of trying for goodness' sake to get the manufacturer, to get the management side of industry in this country to realize how much they need medical advice from time to time and how seriously they lay themselves open to serious difficulties if they don't have medical advice at least on a part-time basis. We have close contacts with the National Association of Manufacturers which haven't been too satisfactory, with the United States Chamber of Commerce, with the American Management Association which is coming along very nicely, and that committee's job, under Doctor Neuquist, from the Texaco Company, is constantly dealing with these trade associations representing the management group.

Another committee deals largely with the labor-union group, and I must say, handles things in a very reasonable manner. Well, roughly these are the things we try to do.

Now, I think the only other thing I would like to say in way of preparation, then I want to hear your problems, is that the house of delegates approved at the last meeting in New York a statement which we have worked over very carefully for almost a year which is entitled: "The Scope, Objectives and Functions of Occupational Health Programs," and without going

into this in detail, it hasn't been printed yet but will be out very shortly, this is the first time that the American Medical Association has agreed upon a statement which defines the needs and the bounds of industrial health programs. This has to do solely with the safeguarding of the employee's health at work. We have no concern, in our council, with medical care for sick employees. That's entirely another matter and falls under the province of the council on medical service. I think you will find this statement helpful if you fall into discussion or argumentation with your medical colleagues, or in fact, with employees or employers as well as union groups. I think you will find it a pretty sound and sensible document and it is one which will be included in the report of the Larson Commission, that is the commission on the Study of Prepayment Medical Care Plans. I will be glad to discuss that further in full detail with you if you like. I am glad to see this brochure just out from the AMA entitled: "The AMA in Action" in which it describes what the association tries to do, not only for its own members, but for the community and for the field of occupational health, the legislature as well. I'll pass that around if I may, Doctor Craig, take a look at it, pass it on. That happens to be my only copy so I'd like to have it back. We have another publication which may interest some of you which isn't really our publication, though I think we are about to endorse it, entitled: "Guide for Conservation of Hearing in Noise," and as some of you may know, this is becoming an increasingly serious problem. Most people after age 45 lose some hearing as we lose some of the elasticity of our limbs and develop presbyopia. There are several states which are already giving full awards to any employee who can demonstrate an appreciable loss of hearing after age 45 on the assumption that this loss of hearing is an industrial, occupational disease; rather an alarming and non-medical type of position which we deprecate. This "Guide to Conservation of Hearing in Noise" is a document which will be at your disposal in the very near future. There was an exceedingly interesting discussion in Detroit a year ago on occupational medicine in industrial relations which has just been published in reprint form from the archives of industrial health and which is available to you if you would like to send in for it.

Now, there are a number of other things that

I won't go into but I've just one more item here which may interest some of you and that is the new report by Henry Doyle and Robert Flinn of the Public Health Service, Mr. Flinn being now the Medical Director of the United States Bureau of Mines, surveying the whole situation on silicosis, in which they show that although the early studies on silicosis — Dunn, Bicher and Joseph and the early lead mining days — are quite sound and the control measures which were adopted then are apparently effective; nevertheless, there is still entirely too much silicosis in the country and Arizona is one of the states in which there are fewer cases than other mining states. Arizona is one of the states which has under 100 cases reported for a year and still one wonders why there are still 100 cases. So, of course, this being an exceedingly difficult problem, as you know, progressive even after you have removed the hazard, and so on.

I think that gives you briefly some of the objectives and some of the working results of the council on industrial health and now, I'd like very much to hear how things go in Arizona; what the problem is with respect to the large industries and the small ones and since I see a number of safety people here, may I also add we in medicine and the council on industrial health consider ourselves the partners of the safety directors, at least we like to be thought of as such. We think that the safety program has been exceedingly successful. It's the one field in the whole safety movement that has been successful. Actually, accidents on highways continue at an appalling pace; accidents in the homes increase continually, but in industry, the accident rate has come down in an amazing manner for which we salute you. You are concerned with safety in industry. We think that there is a large medical aspect to the prevention of accidents and, of course, to the return of the accidentally injured employee to full capacity; and we would like to consider ourselves as partners with the safety directors, so I hope you will feel free to bring up questions on safety as well as others. I didn't mention that we have a very effective but new commission of the American Medical Association, appointed by the trustees a year ago, called the Commission on Medical Aspects of Automobile Injuries and Deaths. It is headed by Doctor Woodruff who is a powerhouse and who insists

that medicine has much responsibility in the prevention of these disabling accidents — accidents on the highways.

STUDY SHOWS "PATCHWORK" OF CHEMICAL LAWS

A RECENT American Medical Association study showed a "patchwork" of state and federal laws regarding the labeling of hazardous chemicals, and pointed up the need for a uniform law.

Bernard E. Conley, Ph.D., secretary of the AMA's committee on toxicology, said his committee and the AMA law department conducted the study in preparation for drafting a model chemical labeling law. A fall conference of interested parties in government, industry and medicine is planned to draft the model law, which will then be submitted to legislative bodies.

The proposed legislation is intended to reduce careless and ignorant handling of potentially harmful products in and around the home, in small businesses and in other areas where control of over-exposure to chemicals is not as efficient as in the manufacturing process, Conley said.

The law will require informative labeling, including listing of possibly harmful ingredients, their potentialities for harm, directions for safe use, and first-aid instructions.

At present all the states require labeling of narcotics; 93 per cent of drugs, and 85 per cent of pesticides. However, only 52 per cent require labeling of caustics and 10 per cent of industrial chemicals. Only New York, Indiana, Kansas and Connecticut regulate hazardous substances in household products.

At the national level, there are several chemical laws, including the Food, Drug and Cosmetic Act of 1938; the Insecticide, Fungicide and Rodenticide Act of 1947, and the Federal Caustic Poisons Act of 1927. In addition, the Interstate Commerce Commission and the Post Office Department have regulations regarding labeling, uses and transportation of chemicals.

The hodge-podge of laws is confusing and leads to omission of many necessary regulations, Conley said. For instance, only 10 of 25 state caustic acid laws are similar to the Federal Caustic Poisons Act. The federal act itself is

limited to only 12 caustic and corrosive acids and alkalies in specified concentrations, of which some are known to be hazardous in lower concentrations. In addition, many dangerous acids and alkalies are not even included in the law.

Of the 46 states with drug laws, only 19 conform to the Federal Foods, Drug and Cosmetic Act of 1938, even though 40 per cent of all drugs sold are confined to intrastate commerce, Conley said.

All but four states have poison laws or regulate the sale of poisons in some way. Only five states (California, Oregon, Illinois, New York and New Jersey) require precautionary labeling of chemical products used in industrial establishments. Other states have special laws regulating specific individual chemicals. In fact, there are 16 types of these special laws and some states have as many as five such statutes.

"By and large there is greater agreement between state and federal laws" in the area of pesticides than in any other major class of chemical products, Conley said. Forty-three states have laws governing the sale and distribution of pesticides.

The need for a uniform law is quite apparent, he said. Uniformity not only will offer greater protection to the users of chemicals, but will facilitate educating the public to the significance of warning labels. It will also avoid the need for special packaging and labeling for each state, thus easing distribution and decreasing the cost of chemical products.

COMMITTEE ON POISONING CONTROL

DOCTOR COBB briefed the membership as to the origin and scope of operation of the poisoning control program and establishment of poison control centers. Originated by the American Pediatrics Association on the national level, each state pediatrics society was solicited and urged to take an interest and active part in support of the objectives. The local pediatricians spearheaded the movement.

The poisoning control program has two objectives, (1) to establish preventive measures through an educational program to alert the public to the dangers of poisonous substances and needless loss of life through carelessness of use or application or accessibility thereto, espe-

cially when stored in the reach of children, and (2) to provide ready information for methods of treatment, to be made available to physicians and hospitals through the establishment of regional poison control centers within the state, particularly in hospitals where 24-hour call services are maintained with registered nurses in attendance.

In the inception of the program, financial assistance is necessary to be obtained from interested groups; however, next year when the program is underway, it is anticipated the College of Pharmacy of the University of Arizona which will administer the project and carry on much of the processing and recording detail, will find ways and means within its budget to cover minimal costs.

A two-card system is proposed to be established, a white card to bear on one side the name of the product with adequate description thereof, manufacturer thereof, etc., and on the reverse side thereof, the intoxicant ingredients; and a yellow card will set forth methods of treatment. The college of pharmacy will assume the responsibility of keeping these cards current and continually keep abreast of new products, ingredients and treatment.

In this latter instance, the establishment of a medical advisory board seems most desirable to assist the college in establishment of medically accepted modes of treatment. It was the consensus that this could be best handled on the local medical society level and, inasmuch as much of the detail will be carried on in Tucson, the Pima County Medical Society should be called upon to appoint a committee of interested and active participants who would serve the college in such capacity. Doctor Jarrett agreed that the safety committee of Maricopa County Medical Society of which he is chairman would be agreeable to reviewing the recommendations of the Pima committee and offer any suggestions or comments indicated.

It was further suggested that it would be wisdom to develop and provide a readily available list of essential preparation ingredient needs and necessary application equipment therefor which could be used as a guide in the establishment of antidote kits.

Tucson Medical Center and eventually St. Mary's Hospital will be poison control centers in the Pima area. While it was suggested cer-

tain hospitals in Phoenix be similarly designated, it was the feeling that all major hospitals in the city should have such centers. Recognizing the cost factor, Doctor Brewer indicated that possibly 15 or 16 hospitals in the state would be initially so designated.

In the State of Florida apparently there is established and in operation a well developed poison control program. The authorities have extended full cooperation and assistance to Arizona in the early stages of its planning. A complete set of record cards used in its system has been obtained and their content is presently being checked and verified. It was felt advisable to gain knowledge of the California program and effort to this end will be continued; likewise, contact with the American Academy of Pediatrics, the Council on Pharmacy of the American Medical Association, and any other comparable group that may be helpful was urged. The executive secretary offered to be helpful to this end and initiate such correspondence.

Legal Opinion

The committee expressed need for initial legal counsel to review the program and submit an opinion particularly as relates to any possible violation of "privileged communication" in the processing of individual poisoning cases for statistical purposes, particularly as regards type of poisoning, product involved, method of treatment administered, and result of such application. Approval of the use of association counsel therefor will be sought.

The committee suggested contact by the executive secretary with the State Department of Health to determine whether or not the reporting of accidental and/or intentional poisoning might be required by statute as pertains to the "privileged communication". This not being a requirement what steps would be necessary to make reporting of poisonings comply with that current, covering statute as regards reporting of venereal diseases, gunshot wounds, etc.

Publicity

Dean Brewer reported that his department has submitted two articles on poisoning control to the Editor-in-Chief for publication in Arizona Medicine Journal and that they have been so accepted. These articles relate to "new poisons" being marketed for public use and practical methods of treating snake bite.

It was determined that the name of The Arizona Medical Association, Inc., should be placed in the heading of the report form.

It was recommended that the secretary of the association write each component county medical society for appointment of one member as

August 1, 1957 Progress Report of the Poison Control Information Center at the University of Arizona College of Pharmacy

WORK at the Poison Control Center is progressing well. The Florida nucleus file is almost ready for duplication pending approval of the Poison Control File Advisory Committee, which will be called together at the earliest possible time.

For the month of July, there were twenty-eight case reports received. As they did last month, aspirin and kerosene again led the list, along

liaison representative, to keep the poisoning control program current and active in that county.

MEETING ADJOURNED AT 5:35 p.m.

Leslie B. Smith, M.D., Secretary

By Robert Carpenter, Executive Secretary

with insecticides, of reported poison cases. 71% of all reported cases involved children 5 years of age and under.

The time of day of the incidents was as follows:

50% occurred between 6 A.M. and noon
35% occurred between noon and 6 P.M.
15% occurred between 6 P.M. and midnight
None occurred between midnight and 6 A.M.

The twenty-eight reported included one death, a one year old child who swallowed kerosene. Except for 3, all cases reported were accidental. The causative agents and age groups are shown in the table.

| POISON | AGE | | | | | | | | | | Un-known | Total |
|---|---------|---|----|---|---|---|------|-------|-------|---------|----------|-------|
| | Under 1 | 1 | 2 | 3 | 4 | 5 | 6-10 | 11-15 | 16-25 | Over 25 | | |
| Hypnotics and Sedatives | | | 1 | | 1 | | | | | 1 | | 3 |
| Analgesics and Antipyretics | | 1 | 2 | 1 | | | | | 1 | | | 5 |
| CNS Stimulants | | | 1 | | | | | | | | | 1 |
| Hormones and Derivatives | | | 1 | 2 | | | | | | | | 3 |
| Solvents (kerosene, brake fluid, & charcoal lighter) | | 2 | 2 | | | | | 1 | | | 1 | 5 |
| Insecticides | | | 3 | | | 1 | | | | | | 5 |
| Household Articles (antiseptics and air deodorants) | | 1 | | | | | | | | | 1 | 2 |
| Miscellaneous (wild mushrooms, scorpion bite, cyanide gas and cathartics) | | | | | 1 | | | | 1 | 2 | | 4 |
| Total | 0 | 4 | 10 | 4 | 1 | 1 | 0 | 1 | 2 | 3 | 2 | 28 |

Eight additional Poison Gas Reports for June have been received by the Poison Control Center. These bring the total cases reported to the Center to 51, for June, in Arizona. Five of the reports involved children between the age of one and five. Aspirin and kerosene were the main offenders.

The Poison Control Center appreciates the wonderful cooperation of the Arizona Physicians and hospitals in reporting poison cases. If more report blanks are needed, or if there are questions or suggestions, please send a note or call the Poison Control Center at the College of Pharmacy, University of Arizona.

AMERICAN CANCER SOCIETY RESEARCH

A - Prostatic Cancer

A BOSTON University pathologist has uncovered evidence that production of female hormone - rather than male hormone, as is generally supposed - is responsible for both enlargement and cancer of the prostate.

The unexpected results of this research by Dr. Sheldon C. Sommers of the Boston University School of Medicine were reported by the Massachusetts Division of the American Cancer Society.

Dr. Sommers based his findings on the post

mortem microscopic examination of the various hormone-producing glands from 223 men with prostatic cancer and from 223 men without any kind of cancer. He determined the number and condition of cells which produce various kinds of hormones and studied tissues on which male and female hormones act.

Eighty per cent of the men who had died with prostatic cancer had produced enough estrogen to enlarge their prostates, even though, in most cases, cells which produce chiefly male hormone, had withered away. Among the non-cancerous controls, only 45 per cent showed prostatic enlargement, considered a sign of pre-

dominant estrogen production.

The finding that prostatic enlargement was almost twice as common among men with cancer as among the controls, raised speculation that enlargement and cancer of the prostate stem from similar hormonal imbalances. Atrophy of tubes from the testicles in many cancer cases also could indicate uninhibited estrogen production.

The hormonal imbalances found here appear to be a product of the aging process, during which male hormone-producing cells were still highly active.

Other scientists have found that prostatic cancers are very common in aging men, although in many cases they never become bothersome enough to be recognized. One study indicated that the incidence rises sharply during the 60s, and that perhaps 50 per cent of all men over 80 have microscopic prostatic cancer. Ninety per cent of these cancer patients were over 60 and 60 per cent over 70.

B — Cell Culture

A technique which enables scientists to grow single human cells into large colonies has borne its first fruit.

It has given rise to the startling possibility that drastic changes take place in their genetic constitution as cells develop and that cells within the same body — and even in the same organ — may contain different genetic makeup.

This was announced by the Colorado Division of the American Cancer Society in reporting on research by Dr. Theodore T. Puck, Professor of Biophysics, (Florence R. Sabin Laboratories) University of Colorado Medical Center. Associated with Dr. Puck in this work are Steven J. Cieciura and Harold W. Fisher.

The University of Colorado scientists modified a system of using an enzyme, trypsin, to dissolve the cement which holds cells together so that they could be separated without injury. In almost all cases it was found possible to grow a single cell into large colonies as easily as other scientists grow colonies of microbes. With this simple and highly successful technique, the research team has developed large masses of tissue from single cells shaken loose from human skin, spleen, lung, liver, bone marrow, brain, muscle, heart, and the (amniotic) tissues which shelter and nourish the human embryo during its nine months of development within the womb.

The scientists earlier found that remarkable differences exist between one cell and its seemingly identical neighbor. For this reason, the technique of growing cell colonies from a single parent cell has become essential in work involving exquisite analysis in such fields as cell heredity, susceptibility and resistance to viruses, radiation effects and the processes of maturation and ageing.

Now the members of the C. U. department of biophysics have observed such distinctive differences between extremely young (fibroblast) cells and highly specialized adult cells within the same organ that they have concluded that the alterations may stem from the very roots of cell life, the genes which govern the inherited characteristics of every cell and of every plant, animal and human.

The findings and their interpretation may even suggest a key to the secrets of ageing. Science generally regards the gene as a stable unit of heredity. It long has been known that genes can be changed by some radiations and chemicals; and scientists have speculated that over the two billion years or so of life on this planet evolutionary forces have changed the genes of the original form or forms of life to produce the various kingdoms, species and races of plant, animal and human life of today. Scientific literature seems to lack any proof, however, that these vast differences, wrought by the ages, could exist in genes of cells only a hair's breadth apart.

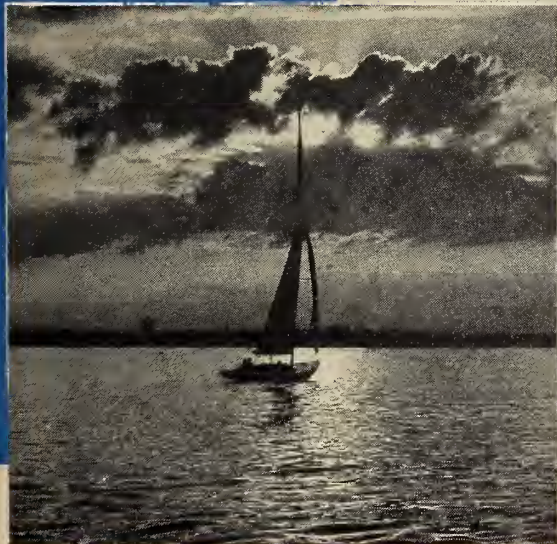
In these experiments the investigators grew in laboratory dishes two types of cells: (1) fibroblasts, which resemble the young, fast-growing unspecialized cells which mature eventually into the fibers of connective tissue which forms tough, resilient sheaths for organs and other tissues of the body; and (2) epitheloid cells, similar to those forming the skin and protective lining of various body tracts.

As these single cells developed into colonies, the group observed that they retained their integrity completely — down through the generations, each offspring cell appeared identical with its single ancestor cell.

The nutritional requirements of fibroblasts and epitheloid cells varied enormously; and it was largely on this observation that the group concluded that the two lines — both from the same organ originally — contained distinctively dif-

(Continued on Page 41A)

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spasm
gets
rough
on your
patients



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450,000 IN ARIZONA COVERED BY VOLUNTARY HEALTH INSURANCE

THE number of people in Arizona who are covered by voluntary health insurance reached a new high by July 1, the Health Insurance Council reported today. As of this date the council estimates that about 450,000 persons were protected by some form of insurance designed to help pay hospital and doctor bills.

This figure, the council said, is part of the continued growth of health insurance throughout the country, which was revealed last May in its 11th annual survey of the extent of voluntary health insurance coverage for 1956. The number of people covered by some form of health insurance in the nation today is more than 118 million, or over 70 per cent of the U. S. civilian population.

In releasing the findings of its survey, which is based on reports of insurance programs of insurance companies, Blue Cross-Blue Shield and other health care plans, the council went on to say that there were 443,000 persons covered by hospital expense insurance in Arizona as of Dec. 31, 1956. The total for 1955 of the number of persons covered for expenses incurred while in the hospital was 432,000.

Surgical expense insurance, which helps to defray the cost of physicians' charges for operations rose to 404,000, as compared with 377,000 the year before.

Persons protected by regular medical expense insurance, providing for doctor visits for non-surgical care, numbered 137,000 in 1956, as against the previous year's figure of 116,000.

LOCATION OPPORTUNITIES

ASHFORK — Pop. 700 — North centrally located — Railroad center — Contact the Women's Club, Ashfork, Arizona.

BENSON — Excellent opportunity for GP — This David-Benson trade area has about 5,000 population with only one doctor available. A small sleep-in hospital can be set up very easily. Hospital 25 miles away. Chamber of commerce will furnish telephone answering service, nine to five. Contact Bernard Fisher, D.D.S., medical committee of the chamber of commerce, Benson, Arizona.

CAMP VERDE — Located in the heart of a large farming and ranching area on the Verde

River. Approximately 100 miles north of Phoenix. Badly in need of a medical doctor. Contact Ivy N. Moser, R.N., Camp Verde, Arizona.

FLAGSTAFF — Pop. 17,500 — Largest city in the north central Arizona trading area. One pediatrician is needed (as there are a number of general practitioners who would gladly refer work to him). Excellent opportunity for an eye, ear, nose and throat doctor. Contact C. Herbert Fredell, M.D., Secretary, Coconino County Medical Society, 121 East Aspen Avenue, Flagstaff, Arizona.

GILA BEND — Pop. 2,500 — 80 miles west of Phoenix — Nearest town to the Painted Rock Dam Project — Good opportunity for general practitioner. Cattle, cotton and general farming. Office and equipment available. \$150 monthly income from board of supervisors. Contact Mrs. J. F. Allison, Box 485, Gila Bend, Arizona.

GRAND CANYON — Excellent opportunity for GP, age 35-45, surgery desirable, for Grand Canyon, Arizona. Government 5-year contract includes 3-bedroom residence at \$40 per month and nurses' quarters plus 12-bed hospital. Contractor provides hospital maintenance and utilities. Contact John S. McLaughlin, Superintendent, Grand Canyon National Park, Grand Canyon, Arizona.

HAYDEN — Pop. 4,000 — Located in southern Arizona. Need for a general practitioner. Have only one doctor available now. Mostly industrial area. Swimming pool, golf course, theatre and social clubs. Has a local clinic, with Ray Hospital 24 miles away. Contact Charles B. Huestis, M.D., Box 928, Hayden, Arizona.

MORENCI — Mining community located near New Mexico-Arizona border — Pop. 10,000. Has vacancy at hospital for GP. Contact Carl H. Gans, M.D., Morenci Hospital, Morenci, Arizona.

PHOENIX — Good opportunity for associate radiologist — Contact Ernest Price, M.D., 9112 N. 2nd Street, Phoenix, Arizona (WI 3-3491).

SAFFORD — In need of GP — Pop. 6,000 — Has ideal year around climate with good schools, park, swimming pool, golf course, Elks Club. Private hospital, open staff. Surgical privileges after six months if qualified. Completely equipped office for rent and equipment for sale. Contact M. T. Sandeno, M.D., 803 Seventh Street, Safford, Arizona.

TUCSON — The VA Hospital is in urgent need of an orthopedic surgeon. They prefer someone who is board certified, but would take someone who has had special training, as they have the local men in this field available for consultation service. State license is necessary, but not necessarily an Arizona license. Contact S. Netzer, M.D., Director, Professional Service, V.A. Hospital, Tucson, Arizona.

YOUNGTOWN — Pop. 130 — Located 16 miles from Phoenix, 4 miles from Peoria, 1½ miles from El Mirage, 1 mile from Surprise, each a potential field of practice. Most residents are 60 years of age or older and are in need of medical care. Office space is currently provided at no rental. A medical center is being planned. Interested doctors may contact Mr. Sid Lambert, Box 61, Marionette, Arizona.

YUMA — Pop. 15,000 — Situated in the southwest corner of the state on the Colorado River. Semi-retired medical doctor, possibly a GP, may work part time or full time. He may do his own surgical procedures or may call upon local surgeons to do surgical procedures. If he would wish, he may be director of the Yuma County Health Unit which is an administrative position. Now paying \$6,600 annually for a permanent part time physician. However, it could be revised upward considerably if he would handle his own surgery and the health unit. If interested, contact Mr. R. L. Odom, P. O. Box 1112, Yuma, Arizona.

FOR INFORMATION ON OPPORTUNITIES IN THE FIELD OF INDUSTRIAL MEDICINE, CONTACT:

Harold J. Mills, M.D., Phelps Dodge Hospital, Ajo, Arizona.

Carl H. Gans, M.D., Phelps Dodge Hospital, Morenci, Arizona.

Ira E. Harris, M.D., Miami-Inspiration Hospital, Miami, Arizona.

Charles B. Huestis, M.D., Box 928, Hayden, Arizona.

Elvie B. Jolley, M.D., Copper Queen Hospital, Bisbee, Arizona.

H. W. Finke, M.D., Magma Copper Company Hospital, Superior, Arizona.

John Edmonds, M.D., Kennecott Copper Corporation Hospital, Ray, Arizona.

Francis M. Findlay, M.D., San Manuel Hospital, San Manuel, Arizona.

LOCATION INQUIRIES RECEIVED

FINCH, CHARLIE B., M.D., 2935 Schaul Street, Columbus, Georgia, *GP*, Age 27. 1954 graduate of Duke University Medical School; interned at Duval Medical Center, Jacksonville, Florida; served two years in the Air Force Medical Corps and is now doing a year of general practice residency at Medical Center, Columbus, Georgia. Desires to practice in a partnership, group or clinic, rather than solo general practice. Available sometime after July 1, 1958.

JENSEN, RALPH, M.D., Route 1, Box 431, Shelbyville, Tennessee, *GP*, 1955 graduate of University of Cincinnati. Has completed one year of general surgery at Cottage Hospital, Santa Barbara, California. Possesses an Arizona license. Desires an assistant or associate practice. Available now.

LEE, JAMES JOSEPH, M.D., 6022 Peggy Drive, Louisville, Kentucky, *Ob-Gyn*, Age 36, 1950 graduate University of Louisville Medical School. Has had 2½ years of general practice and will complete 3 years of residency training in November of this year. Interested in an assistant or associate practice.

MICHEL, JULES H., M.D., 1734 E. 72nd Street, Chicago 49, Illinois, *GP*, Age 28. 1954 graduate Chicago Medical School. After internship immediately went into military service where he has just completed 2 years of active duty with Army Medical Corps. Diplomate of the national board. Interested in starting full time general practice in Arizona, either with a group, as an associate with partnership possibilities or a suitable independent general practitioner in a community. Available November 1957.

SABA, PHILLIP Z., M.D., 6127 Prospect Avenue, Dallas, Texas, *GS*, 1947 graduate of Southwestern Medical School. Has just completed residency and is interested in clinical, assistant or associate practice. Available now.

ST. RAYMOND, Bernard Henry, M.D., 968 Wilson Drive, New Orleans, Louisiana, *Ob-Gyn*. 1951 graduate Louisiana State University; has had 3 years of residency training and has completed 2 years of active duty in military service. Interested in clinical, assistant or associate practice. Available September of this year.

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THE ROLE OF THE DOCTOR IN BLUE SHIELD

DR. Fred Sternagel, president of the Iowa State Medical Society, and Dr. James W. Colbert, Jr., St. Louis University's dean of medicine, have offered sound counsel on shaping the course of Blue Shield. Both agree that the future of these plans depend upon the guidance the profession gives to their development.

On the president's page in the Iowa Journal for June, Dr. Sternagel reminded his colleagues that Blue Shield must continue to shape its course in accordance with changing conditions and public demand so that the program would continue to serve as an effective means of budgeting the cost of medical care.

"Blue Shield's job," wrote Dr. Sternagel, "is not yet finished for the spectre of 'socialized medicine' still haunts us. We shall have to cooperate intelligently and unselfishly, if our plan is to protect the dignity of individual enterprise. It is clear that this program cannot continue to maintain leadership in a competitive field unless we work more closely (with it) than ever before."

Meanwhile, in San Francisco, Dr. Colbert told an annual staff day audience at St. Mary's Hospital that "it is absolutely essential that the plans do not get out of the control of the medical profession; if they do, the profession and the welfare of the patient will both suffer."

The thoughts expressed by Drs. Sternagel and Colbert are to the point. They place in sharp

perspective the fundamental principle on which Blue Shield plans were organized and must continue to operate. And today, perhaps more than ever before, developments in the health prepayment field necessitate a dedication to the principle of physician control with renewed vigor.

What Dr. Sternagel and Dr. Colbert were saying is clearly and concisely the clue to Blue Shield progress. Their ideas are basic . . . for it is in fact the physician's leadership, guidance, and active participation that are fundamental to the principles and objectives Blue Shield plans were organized to serve. It is obvious, therefore, that the degree to which the profession contributes to the development of Blue Shield is alone the factor determining the extent to which Blue Shield will *serve the profession and the public best*.

With its strong ties to the profession through local medical society sponsorship, Blue Shield plans *can* fully serve both professional interests and the public's need for a satisfactory means to budget medical care costs. And over the years, active physician participation in the affairs of Blue Shield has been encouraged and earnestly sought for the reason that those who administer the plans recognize that in matters of providing health care coverage, it is the physician's judgment, leadership, and counsel that must prevail. It is only under these conditions that health care coverage consistent with the values and traditions of American medicine can continue to flourish and serve the public fully.

NEW FILMS AVAILABLE

AMA PRODUCES NEW FILM FOR THE PUBLIC

"WHAT doctors do as a group is sometimes more important than what they do individually." These are the words of news commentator John Cameron Swazy in setting the stage in a new AMA film for a series of incidents documenting how organized medicine serves Americans everywhere. Swazy is narrator for this 30-minute color film released to medical societies for local showings Sept. 1. The film was premiered Aug. 28 at AMA's Public Relations Institute in Chicago.

Titled "Whitehall 4-1500," the film tells the story behind this phone number, which puts a caller in touch with America's physicians as a group — the American Medical Association head-

quarters in Chicago. Dramatic, short sequences show how AMA in action helps save youngsters' lives through poison control activities, helps reduce highway deaths, helps place physicians in isolated areas, helps make jobs safer for industrial workers and life better for everyone. It reveals the story of AMA efforts to solve many current health problems, such as alcoholism and mental illness.

"Whitehall 4-1500" tells a positive story unfamiliar to many Americans — a story "behind the headlines," says Swazy. He also says that "shoved to the back pages are items which you and I know are the real news of the day . . . the warm stories of America's innate dignity, its dedication to high ideas . . . the unselfishness and service to others which are the prevailing concepts of our way of life."

MENTAL HEALTH FILMS AVAILABLE FROM AMA

THREE documentary mental health films recently have been added to the AMA film library. (1) "We, The Mentally Ill" — patients at St. Elizabeth's Hospital, Washington, D.C., present drama about mental illness based on the life of Dorothea Lynde Dix, mental health crusader; summarizes existing conditions in mental institutions and dramatic new medicines revolutionizing treatment. (2) "Alcoholism: The Revolving Door" — demonstrates early treatment of acute alcoholism with both psychotherapy and new drug therapy; covers meeting of Alcoholics Anonymous; dramatizes conditions on Skid Row. (3) "Man in Shadow" — dramatic presentation of man's struggle to overcome mental illness, expertly combined with documentary film taken at Cleveland State Hospital where patients are seen at their daily routines; presents one patient's reactions to various forms of treatment.

First two are 16 mm, black-and-white, 30-minute, sound films from the "March of Medicine" television series. Last film is 16 mm, black-and-white, 52 minutes, sound, originally shown on "Armstrong Circle Theater" television program.

5 New Films By the Nat'l. Foundation For Infantile Paralysis

FIVE new films available for showing to professional audiences are announced by the National Foundation for Infantile Paralysis. They are designed to interest physicians, nurses, physical therapists, occupational therapists and students of all professional schools.

(1) Rehabilitation of Respiratory Patients — 1957 — BW — Sound — 16 mm — 12 minutes.

(2) Principles of Artificial Respiration — 1957 — Color — Sound — 16 mm — 29 minutes.

(3) Assistive Devices for the Physically Handicapped — 1957 — Color — Sound — 16 mm — 12 minutes.

(4) Muscle Breathing Patterns in Poliomyelitis — 1956 — Color — Sound — 16 mm — 15 minutes.

(5) The Anatomy of the Hand — Part II — 1956 — Color — Sound — 16 mm — 30 minutes.

Three weeks' advance booking is requested for films. Write to: Division of Professional Education, National Foundation for Infantile Paralysis, 301 East 42nd Street, New York 17, New York.

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Phoenix Clinical Club

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL

PRESENTATION OF CASE NO. 25

FIRST admission: A fifteen-year-old girl was admitted to the hospital because of severe frontoparietal headaches, vomiting and loss of vision, beginning about four months before entry. The headaches were accompanied by forceful vomiting, apparently without nausea, were aggravated by walking about and were somewhat relieved by lying down. The headaches occurred with increasing frequency, becoming almost constant by the time of admission. Three weeks before entry, she had a particularly severe headache intensified by any movement of the head, during which there were projectile vomiting, and retraction of the head. The temperature was normal and symptoms disappeared after a few hours in bed, but after this she was drowsier than usual. One week later, she began to complain of ringing in the left ear. She became increasingly irritable. One week before entry, upon arising in the morning, she said she could not see well. During the next few days vision became progressively worse, and she was brought to the hospital.

The patient's birth and early development were not remarkable. As a child she had had chicken pox, measles, mumps and pertussis without serious incident. There had been no head injuries. The menarche had occurred at the age of twelve, and the periods had been normal until the present illness, when the flow became scanty. For several years, she had grown rapidly and was "underweight." Because of this and scholastic difficulties, she was taken out of school one and a half years before entry.

On physical examination, the patient was drowsy, vomited, held her head stiffly in a retracted position, and complained of a left fron-

toparietal headache. She appeared poorly nourished, and looked younger than her stated age. At the time of admission, she was blind in both eyes, and the pupils were bilaterally 4 mm. in diameter and unreactive to light, but on the following morning, when her general condition was somewhat improved, inconstant light perception was found in the right eye and a visual acuity of 5/200 in the left eye. Examination of the visual fields at that time showed marked peripheral constriction and suggested a nasal hemianopia on the left; the field of the right eye could not be adequately tested. There was bilateral papilledema of about 3 diopters, with pallor of the right disk. Hearing was slightly impaired in the right ear, and on the Weber test, the tuning fork was best heard in the left ear. The cranial nerves were otherwise unremarkable. There were no abnormalities of the motor system. Tendon reflexes were generally sluggish, but brisker in the left leg than in the right. The right plantar reflex was flexor, and the left equivocal. There were no sensory changes. The examination was otherwise within normal limits.

The temperature and blood pressure were normal, and the pulse was 100. Urine and blood studies were negative.

In the hospital ventriculography demonstrated marked dilatation of the lateral and third ventricles, especially of the posterior horns of the lateral ventricles. The posterior part of the third ventricle and the aqueduct and fourth ventricle were not demonstrated. The upper part of the anterior horns were more widely separated from each other than usual. A cerebellar exploration was done, at which the cerebellum was found to be under great tension although the hemispheres felt normal. A catheter was passed via the fourth ventricle along the aqueduct for about 13 cm., where it stopped. Fluid and air injected into the lateral ventricles were thought to appear at the fourth ventricle. The patient returned to the ward in good condition. X-ray treatment totaling 1600 r was given postoperatively over an eight-day period, divided among the frontal lobe, the vertex and the suboccipital region. Meanwhile, there was a further loss of vision. At the time of discharge, on the twenty-

seventh postoperative day, the right eye was totally blind, and there was only light perception in the left eye. The right pupil did not react to light, and the left reacted only slowly. The remainder of the neurologic examination was unremarkable.

Subsequently, the patient was followed in the Out-Patient Clinic. Eight months after discharge she was found to have no vision in either eye, and the pupils did not react to light. Papilledema was no longer present, but there was bilateral optic atrophy. A lumbar puncture revealed clear spinal fluid, under a pressure equivalent to 200 mm. of water, containing 2 lymphocytes per cubic millimeter and a total protein of 49 mg. per 100 cc. Otherwise, she remained in excellent health until four years later, when she had started to have attacks of impaired consciousness lasting a few seconds at a time, in which she saw flashes of yellow light and was unable to hear what was said to her. In a more severe attack, later that year, she fell and bruised her hip. An electroencephalogram showed a bilaterally abnormal record characterized by slow waves and wave spikes. In the following year, she began having generalized convulsions in which she first saw flashes of light "in the left eye," with convulsive activity beginning in the left arm.

Final admission (ten years later, at the age of thirty): In the interval, the patient had had occasional seizures, but had got along fairly well, learning to read Braille and to work at weaving. Seven months before entry, the seizures began to be more frequent, finally occurring once or more often daily. These were described as lapses of consciousness for ten to fifteen minutes, with no convulsive movements. Five hours before admission the patient cried out and was found unconscious with thrashing movements of the left arm lasting one and a half hours, followed by rapid opening and closing movements of the left hand for two hours. The patient remained unresponsive and was brought to the hospital.

On physical examination, she was semicomatose. She was able to move the right arm and leg on command, but the left arm and leg were flaccid and motionless. The fundi showed optic atrophy. The right eye was abducted, and there were wandering movements of both eyes to the right, but neither eye crossed the midline

to the left, and there were no upward movements, either spontaneously or on flexion of the head. The pupils were 4 mm. in diameter and were fixed. It was thought that she reacted less vigorously to pinpricks on the left side. The tendon reflexes were sluggish and approximately equal except that the left knee and ankle jerks were slightly brisker than the right. The plantar reflexes could not be obtained. There was a slight erythematous rash on the face and nose and around the eyes. The physical examination was otherwise unremarkable.

The temperature was 103.5°F., the pulse 125, and the respiration 32. The blood pressure was 84 systolic, 62 diastolic.

The blood hemoglobin was 14.5 gm., and the white-cell count 27,900, with 90 per cent neutrophils, 8 per cent lymphocytes and 2 percent monocytes. The urine gave a three plus reaction for albumin; the sediment contained occasional granular casts.

In the hospital continuous jerking movements of the left arm and leg and of the face and neck muscles bilaterally developed. The temperature rose to 105°F., and the patient died fifteen hours after admission. A lumbar puncture performed post mortem showed 3 to 5 lymphocytes per cubic millimeter, a total protein of 52 mg. per 100 cc. and a normal gold-sol curve.

DR. M. W. MERRILL

This case today reminds me of several years ago in the clinical club when I had three discussions during the year, each one of them dealing in one way or another with calcium metabolism. This year, with only two discussions to present, I have found myself with similar subjects again, both of them in rather unfamiliar territory, intracranial lesions. I might also say that they have both been interesting and instructive cases, and even though I will probably miss the diagnosis today, I have enjoyed working on the case.

A brief summary may be in order. This patient, a fifteen year old female, had progressive symptoms for four months before being admitted to the hospital for diagnosis and treatment. These symptoms were definite, severe, and progressive, and one wonders why the delay in seeking help. After four months the patient was hospitalized and a diagnosis of an expanding intracranial lesion made and exploratory surgery performed. The lesion was not found, no pro-

cedure was carried out to relieve the pressure, and X-ray therapy was instituted. Subsequently the patient lived for 15 years, during which time she developed recurrent convulsive seizures which finally led to her death, 15 years after the onset of the disease.

The initial symptoms all pointed to a progressive increase in intracranial pressure without definite localizing signs. These included headache, vomiting without nausea, often projectile, and diminution of visual acuity to a state of blindness. The eye findings will not be reiterated in detail but the picture was one of first, papilledema, at which time some slight visual acuity was present, followed by optic atrophy secondary to the increased pressure and complete blindness. The initial findings of peripheral vasoconstriction and suggested left nasal hemianopia were without definite value as to location of the lesion, but did suggest some right sided radiation either in the temporal, occipital or parietal lobe. Likewise, the initial reflex changes which showed brisker reflexes on the left side, pointed to the probability of more pressure on the right hemisphere.

It is in the ventriculogram findings that we are given the first definite lead in localizing the lesion. Obviously the ventriculogram was the diagnostic procedure of choice. The doctors were dealing with an obscure neurological lesion associated with high brain pressure. In the presence of the latter, pneumoencephalogram is contraindicated because of the risk of increasing the pressure. Also, there was nothing to suggest a lateral or peripheral lesion and therefore arteriography would probably have been of little value. One does wonder why the cerebellar approach was used, as the exploration from this approach found the surgeons a long way from the obstructing lesion. I call it an obstructing lesion because the findings pointed to some lesion located near the posterior aspect of the third ventricle which was exerting obstructive pressure on the aqueduct of Sylvius and producing internal hydrocephalus. This was borne out by the ventriculogram findings which demonstrated marked dilatation of the lateral and third ventricles, particularly the lateral horns of the lateral ventricles and the anterior portion of the third ventricle. The posterior part of the third ventricle was not demonstrated, nor was the fourth ventricle visualized. Further sugges-

tive evidence that the lesion was located near the superior posterior aspect of the third ventricle was the fact that the upper part of the anterior horns of the lateral ventricles were more widely separated than usual. If we can accept the findings of the exploration and the ventriculogram, we can place the location of the lesion in the area of the pineal gland. From this point on then, providing our reasoning is correct to here, we must attempt to show that some lesion arising in or near this gland, caused the clinical problem we are dealing with today.

Before proceeding further with the differential diagnosis, I wish to interject a few remarks about the surgical procedure this girl was subjected to, keeping in mind that the surgery was performed at least prior to 1940 or 1939. The question was raised about the cerebellar approach to this problem. Generally speaking, I am informed, in the face of an increase in the intracranial pressure and with the lesion located above the tentorium, cerebellar decompression adds to the hazards to the patient because of possible herniation through the incisura of the tentorium following the procedure. Another point which has been raised is why relief from the pressure was not attempted by the Torkildsen procedure, a ventriculocisterna magna shunt with polyethylene tubing. I presume that Torkildsen had not described his procedure when this patient was operated upon.

Some consideration should be given at this time to the seizure pattern which developed in this patient. The flashes of yellow light probably represented unformed visual hallucinations arising from involvement of the occipital lobe or lobes. The periods of unconsciousness were probably produced by involvement of the periaqueductal gray matter, and the motor activity of the left hand and arm suggested involvement of the calcarine area of the right occipital lobe. It is my belief that these phenomena represented either extension of the lesion into these areas or atrophy of brain tissue due to vascular impairment produced by the lesion. The final episode of unconsciousness and fever and death suggests progressive involvement by the disease. One finding of interest on the final admission was the failure or paralysis of upward gaze. This is known as Perinaud's syndrome and is produced by lesions arising in the pineal area which compress the quadrigeminal plate of the

mid-brain. I consider this further evidence that we are dealing with a lesion arising in or close to the pineal gland.

Some mention should be made of the electroencephalogram findings. These simply showed bilateral abnormality with no specific localization.

As you have all deduced by now with little difficulty, I am going to rest my case today on the diagnosis of a pineal tumor. I think it obvious that this patient had an expanding lesion, probably malignant. The history of the case suggests that this lesion initially blocked the ventricular system, produced papilledema and secondary optic atrophy, and showed considerable response to irradiation. The fact that the signs of increased intracranial pressure disappeared after x-ray therapy and the fact that the patient lived for nearly fifteen years I believe indicates that this tumor was quite radio-sensitive. I am ruling out third ventricle cysts, cysts of the pineal or any other benign lesion because of the progression and fatal termination of the disease. Malignant lesions arising in the brain adjacent to or nearby the pineal must of course be considered. I am ruling these out principally because the first localizing sign of this disease was blockage of the ventricular system most commonly produced in this area by pineal tumors. Pituitary tumors, and cranio-pharyngiomas should be thought of, but they do not fit the clinical picture or the findings.

One other point that should be mentioned in the differential diagnosis is that of brain injury following x-ray therapy. In my last case the damage caused following irradiation produced the seizure pattern and eventual death from status epilepticus. In this case the seizure pattern is different. There is less localization and more evidence of a progressive, invasive lesion. Furthermore, the duration of symptoms was much longer than that which follows irradiation damage in the usual case. It is true that the marked symptoms of increased intracranial pressure disappeared after the therapy, and the seizure pattern developed, but for the reasons stated I am ruling out x-ray damage to the brain and hoping I am not overlooking the underlying pathology.

A few words about the pineal gland and pineal tumors and I will conclude this discussion. The gland is located, as I have described,

at the posterior and superior extremity of the third vertebral ventricle between the splenium of the corpus callosum and the corpora quadrigemina. It is approximately 7 x 4 mms. in size in the adult and frequently contains a deposition of calcium salts after adolescence. A great deal of work on the physiology of this gland has been done, most of it inconclusive. It is however, considered a definite gland of internal secretion and most likely has something to do with the sexual development, particularly in the male. These tumors are much more common in the male sex, by the way.

Tumors of the pineal gland are usually classified as one of three types depending upon whether they are composed of the pineal cells, which are characteristic in appearance, neurological cells, or they may be of a teratomatous nature. I am not going to attempt to describe the cellular picture of any of these types, nor do I believe it is possible to further classify the lesion under consideration today other than to call it a malignant lesion of the pineal gland. I suppose one should also mention a tuberculoma of this structure, but I do not believe it would have produced this picture, nor show a response to irradiation. In a recent review of tumors arising in the pineal region, it was pointed out that some of the patients lived for as long as 20 years after the diagnosis was made.

My first diagnosis then will be pinealoma, or tumor arising from the pineal gland. Secondly, I would choose a malignant tumor arising in the region of the pineal gland, such as a glioma or neuroblastoma.

DIFFERENTIAL DIAGNOSIS

Dr. Raymond D. Adams: William Gowers, in his admirable monograph, states that "the subject of the diagnosis of disease . . . certainly transcends in complexity, and perhaps exceeds in interest, all other problems in practical medicine." Those who regularly attend these exercises must surely concur in this opinion. For my part, I must confide that while struggling with this case last evening I found myself in sympathy with Gowers concerning the complexity of diagnosis.

The clinical data with which I am presented lead unmistakably to the conclusion that this patient suffered from a brain tumor. The frontoparietal headaches, the forceful vomiting and the papilledema, or "double optic neuritis" as it

was formerly called, are the commonly accepted signs of increased intracranial pressure. Of course, one must at once consider syndromes that simulate brain tumor, so-called pseudotumor syndromes, such as thrombosis of the superior sagittal sinus, aqueductal stenosis and chronic arachnoiditis, but I shall dismiss these possibilities at the moment because they are usually diagnosed only by the exclusion of all other diseases.

This part of the clinical problem is straightforward, but I am sure that Dr. Castleman and Dr. Richardson would not accept such a simple formulation of the case. They require, as all clinicians do, two additional facts in a suspected case of intracranial tumor: one is the location of the lesion, and the other is the nature.

Regarding the location of this pathologic process I must depend on the other clinical and laboratory data. It is noteworthy that focalizing or lateralizing signs were slight or absent. There was no paralysis of the limbs, crude sensory defect or aphasia. In a young person with signs of increased intracranial pressure and no conspicuous lateralizing signs one always thinks first of tumor of the cerebellum, the fourth ventricle or third ventricle, or of hydrocephalus due to congenital or inflammatory stenosis of the aqueduct of Sylvius or a chronic meningitis (adhesive arachnoiditis).

Of the other clinical phenomena, the blindness was probably the most striking finding. It could have been due to a suprasellar craniopharyngioma pressing directly on the optic chiasm. However, the onset relatively late in the course of the illness, some months after headache, the rapid progression of visual impairment, the presence of papilledema with minimal atrophy of optic discs and the constricted visual fields are all characteristic of optic atrophy consequent to high intracranial pressure and papilledema. Thus, blindness provides no certain clue to localization.

The retraction of the head, the intensification of headache on any movement of the head and the stiff neck suggest a threatening cerebellar herniation, though at operation some days later the cerebellar hemispheres were said only to be full and hernia was not mentioned. The drowsiness and slowness of response could be explained by high intracranial pressure. Again, these

symptoms lack localizing value. The ringing in the left ear, and the impairment of hearing are of interest, pointing to a disturbance of the eighth nerve or cochlea, but without other signs of disease in this region, one seeks alternative explanations. Bilateral impairment of hearing may be due to a lesion of the inferior colliculi and often occurs in pinealoma. May I ask about hearing in the right ear? Was an audiogram done?

Dr. Edward P. Richardson Jr.: No.

Dr. Adams: Were ocular movements recorded?

Dr. Richardson: They were not described in greater detail than appears in the protocol.

Dr. Adams: Limitation of upward gaze was not noted until the last illness. Did the pupils constrict on attempted convergence?

Dr. Richardson: That was not mentioned.

Dr. Adams: Was the patient able to stand and walk, and was there an ataxia of gait at that time?

Dr. Richardson: No such observation was mentioned.

Dr. Adams: I would attach importance to what I assume was the normal physical development and regular menses up to the time of hospital entry and the lack of polyuria or polydipsia, obesity or precocious puberty. Slight pyramidal-tract signs were present on the left but were not sufficiently prominent to be helpful.

May I see the x-ray films?

Dr. Joseph Hanelin: They are not available.

Dr. Adams: I was going to ask if there was intracranial calcification; if the sella turcica was flattened or enlarged; if the clinoid processes were decalcified; and if there was any sign of a mass occupying the posterior part of the third ventricle.

Dr. Benjamin Castleman: The following is a report of the plain skull films:

There is marked increase in the convolutional markings, and separation of the suture lines. The dorsum sellae, as well as the floor of the sella, is gone. The findings are those of marked intracranial pressure without localizing signs.

Dr. Adams: The ventriculogram and subsequent operative exploration of the posterior cranial fossa tell me that the cerebellum was normal and that the fourth ventricle and aqueduct of Sylvius were patent for 13 cm. Do you measure that from the obex of the medulla?

Dr. James C. White: It is about 6 cm. from the obex to the third ventricle. The tip of the catheter presumably passed upward through the foramen of Monro and entered the lateral ventricle.

Dr. Adams: Does that not extend far beyond the aqueduct?

Dr. White: Yes.

Dr. Adams: That is surprising. I may assume, therefore, that the hydrocephalus that was demonstrated was due to an obstruction of the third ventricle, and I must consider the differential diagnosis of benign tumors presenting in the third ventricle. These are suprasellar craniopharyngioma, colloid cyst and pinealoma.

It is difficult to distinguish these tumors on clinical grounds alone. For this I have the authority of Dandy, whose large experience with this group of tumors was summarized in a small monograph. He states that "tumors of the third ventricle usually cause advanced pressure but with few exceptions produce no accurate localizing signs. All efforts to develop a diagnostic syndrome of neurological signs and symptoms have been unsuccessful." Yet he concedes that there are several findings that lead to suspicion: for the suprasellar craniopharyngioma, onset often in children and adolescents, visual disturbance (bitemporal hemianopia or other field defects), headache and vomiting, retardation in growth and sexual development and suprasellar calcification; for the colloid cyst and other benign intraventricular tumors, onset of colloid cyst in adult life, other tumors at any time, headache and mental deterioration, blindness and ataxia later, episodic headache with blindness and bilateral paresthesias and weakness of legs, at times influenced by posture; and for the pinealoma, onset in childhood, adolescence and adult life, headache and vomiting, paralysis of upward gaze, dilated fixed, often unequal pupils, abnormal movements of limbs (that is, chorea or ataxia of trunk and limbs), bilateral impairment of hearing, occasionally sexual precocity and blindness late in illness.

Since I have not heard of or seen a colloid cyst in a fifteen-year-old person, the differential diagnosis is between the other two lesions. There were no crucial data that permit a definite diagnosis of either pinealoma or craniopharyngioma. In favor of pinealoma is good response to x-ray therapy, failure of posterior part of the third

ventricle to fill, tinnitus and deafness and relatively late affection of vision.

I assume that the neurosurgeons made a diagnosis of pinealoma, for they gave x-ray treatment and made no attempt to operate. Most neurosurgeons regard the pinealoma as inoperable. Evidently, the hydrocephalus was relieved either as a result of x-ray therapy or by some other means, and the patient did well for several years.

The seizures that occurred in the last ten years of life were surely due to a supratentorial lesion. Was it the result of the puncture lesions created by ventriculography, or had the tumor enlarged and encroached upon adjacent parts of parietal and occipital lobes? I cannot decide on this. I believe we have seen cases at autopsy in which the scar of ventricular punctures was the only explanation of epilepsy. Of interest are the flashes of light in the left eye — which indicated that the lesion involved visual structures in the right cerebral hemisphere, probably the occipital lobe. By central excitation of visual centers or pathways these flashes of light could occur even though the patient was blind from disease of the optic nerves, an unusual circumstance.

I think the differential diagnoses are suprasellar craniopharyngioma, colloid cyst and pinealoma, all of which can cause flattening and enlargement of the roof of the anterior part of the third ventricle, with pressure on the sella and its contents. I take it there was some erosion, which could have been due to increase in the intracranial pressure with no great enlargement of the sella, no destruction of the tissue and no calcification. The best I can do with this is to exclude the pseudotumor syndromes, a diagnosis that one arrives at almost by a process of exclusion, and make a positive diagnosis of a third-ventricle tumor. I should favor pinealoma over craniopharyngioma. I should expect that there was some degree of hydrocephalus but that it was not the cause of death. I expect that the tumor that will be demonstrated did not seriously obstruct cerebrospinal-fluid circulation.

Death was, in my opinion, due to status epilepticus. Until this last series of convulsions we must assume that the patient was using the left arm and leg properly, was not having headaches and was not deteriorating mentally. In

her comatose state the failure to move the left arm and leg could have been due either to a postepileptic paralysis or to a slight motor deficit that had existed since the first admission and had become manifest during coma. The fever and leukocytosis could be attributed to the seizures.

Dr. White: At the time that we took the ventriculograms we could not be sure that the questionable defect in the posterior portion of the third ventricle was not caused by incomplete air filling and that disease in the fourth ventricle could be excluded; that was why the exploration was done. No abnormality was found there. We thought the patient had a tumor lying either in the brain stem just below the third ventricle or just above the aqueduct in the region of the pineal body; that is why she was given x-ray treatment.

Dr. Adams: The posterior part of the third ventricle was not well visualized.

Dr. White: The anterior part was, so that one ought to be able to rule out a third-ventricle cyst, which is always situated at its rostral end, but that does not rule out a lesion posteriorly around the aqueduct.

Dr. Jacob Lerman: I should like to ask Dr. Adams if the note that the menstrual flow became scanty and the note about the growth might not mean something — that in some cases it might point to the site of the tumor.

Dr. Adams: With pinealoma in both males and females there may be a precocious sexual development; puberty may occur as early as six to nine years of age. Also, there are occasional cases in which there is merely a general overgrowth of skeleton. The usual effect of a suprasellar craniopharyngioma beginning in the pre-pubertal child is to retard sexual development and delay menses or prevent them from appearing at all. The clinical picture is one of general infantilism or obesity, with lack of sexual development. Scant menstruation in the last months of life would be difficult to interpret.

CLINICAL DIAGNOSES

Brain tumor, brain stem, roof of third ventricle. Status epilepticus.

DR. ADAMS'S DIAGNOSES

Pinealoma, with obstructive hydrocephalus and consecutive optic atrophy.

Status epilepticus.

ANATOMICAL DIAGNOSES

Pinealoma, astrocytomatous form.

Optic atrophy, bilateral.

Congenital absence of corpus callosum.
(*Status epilepticus.*)

PATHOLOGICAL DISCUSSION

Dr. Castleman: Of course, the main findings were in head; the remainder of the examination showed only pulmonary edema and congestion. The cerebral findings will be discussed by Dr. Richardson.

Dr. Richardson: There was a tumor of the pineal body measuring about 2 by 3 cm., a smoothly rounded mass so situated that it displaced the posterior commissure somewhat downward and pressed lightly on the quadrigeminal plate. A tongue of the tumor tissue projected downward for a short distance into the cerebral aqueduct, and a considerable portion of the tumor bulged forward into the lumen of the third ventricle. In addition, there was marked downward bulging and thinning of the floor of the third ventricle, and both optic nerves and the optic chiasm were stretched and were severely atrophied. Another striking finding in this case was complete absence of the corpus callosum. In its place, there was a thin, membranous structure, apparently devoid of nervous tissue, that formed the roof of the lateral ventricles in the normal location of the corpus callosum. There was also marked dilatation of the ventricular system, particularly of the occipital horns. At lower levels, the aqueduct, fourth ventricle and brain stem were normal.

Microscopically, this tumor was made up of cells that varied to a considerable extent in size but in general were of the same type. Some were round; some were fusiform, with abundant fibrous processes straining in a manner identical to that of glial fibers. No mitoses were seen. The microscopical appearance of the tumor in general suggested a form of astrocytoma. In one section, there was an island of tissue that was similar in structure to the normal pineal body. The widespread presence of glial fibers in the tumor led us to believe that it was a glioma. The structure was too uniform for a teratoma. The combination of groups of large cells and masses of small cells resembling lymphocytes,

often seen in pineal tumors, was not present in this case. We were unable to discover any lesion to which the convulsive seizures might with certainty be attributed. Sections of the cerebral cortex disclosed no abnormalities.

Dr. Adams: It is your impression that death was due to status epilepticus rather than something that happened to the patient?

Dr. Richardson: Yes.

Dr. Allen G. Brailey: Was the absence of the corpus callosum congenital?

Dr. Richardson: We believe it was congenital and represented a failure in development that was totally unrelated to the later events.

Dr. Adams: One of the startling discoveries made in the last few years had been that absence or surgical section of the corpus callosum causes no important disturbance of mental function. It is, of course, the major commissural system, between the cerebral hemispheres. Formerly, it was believed that lesions here resulted in profound dementia. Recently, the corpus callosum has been widely incised in a series of

cases of epilepsy, and by the most careful tests no change in mental function has been demonstrated. It has also been observed by a number of neuropathologists that the corpus callosum may be absent in patients who have been entirely normal in every way. However, in many cases there have been mental retardation and other signs of developmental defect. The conjunction of a tumor of the pineal body, which is often teratomatous, and congenital absence of corpus callosum is noteworthy.

A Physician: How does Dr. Adams account for the seizures?

Dr. Adams: I shall leave that to your imagination. I do not believe this tumor accounts for seizures beginning with visual aura. I should wonder about the parietal lesion. Dr. White, do you have any explanation?

Dr. White: I was struck by the same situation. The patient had seizures for about ten years. Once in a while severe hydrocephalus can cause seizures, but I doubt that her hydrocephalus was sufficiently severe.

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Woman's AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

Convention Report — June 1957

THE Roosevelt Hotel in New York City was the headquarters for the 34th annual convention of the Woman's Auxiliary to the American Medical Association, June 3-7, 1957.

On Monday Auxiliary members and guest speakers, specialists in their fields, participated in preconvention panels and round table discussions on legislation, public relations, program, organization, "Today's Health," American Medical Education Foundation, and publications. As your president, I substituted on a bulletin panel for Mrs. Roy Hewitt, Western regional chairman and discussed the topic "Where the Responsibility Lies in Procuring Subscriptions to the Bulletin." The bulletin is a current work book of authentic information and should be familiar to every officer and Auxiliary member. Some states include bulletin subscriptions in their Auxiliary dues. The subscription is tax deductible.

In the afternoon the Woman's Auxiliary to the New York Medical Society was hostess at a tea and fashion show at the Tavern on the Green honoring Mrs. Robert Flanders, national president, and Mrs. Paul Craig, president-elect. Guests included the national board of directors, committee chairmen, state presidents and presidents-elect, and wives of the officers of the AMA. The program and refreshments were furnished through the courtesy of Charles Pfizer and Company.

Mrs. William Phillips, state "Today's Health" chairman, represented Arizona at the third annual "Today's Health" breakfast on Tuesday morning. This is given as an honor to the state Auxiliaries who reached or exceeded 100 per cent of their subscription quota. Three of our counties received recognition in "Tips and Topics", Yuma County in the Most Exclusive group with 564 per cent and Yavapai with 383 per cent and Gila County with 217 per cent in the More Exclusive group. Health education is the objective of this fine publication and each Auxiliary member is urged to see that her husband has



Mrs. Charles S. Powell

a subscription to the magazine in his office. It is estimated that about 33 per cent of the lay subscriptions are bought because the magazine was first seen in a doctor's office. There was an increase of 19,000 subscription credits over last year.

Mrs. Flanders presided at the formal opening Tuesday morning. After greetings and presentations, 457 delegates answered roll call with over 1,200 doctors' wives present. The memorial service, which took place at this time, honored the memory of two of our Auxiliary members from Arizona, Mrs. Philip G. Corliss and Mrs. Lamar B. Harper.

At a luncheon in honor of the past presidents, Dr. Howard Rusk, Professor of Physical Medicine and Rehabilitation, spoke on "Sick People in a Troubled World." Dr. Rusk emphasized the role of health programs in promoting international understanding. He stated that activities for people over 65 had decreased psychosis and enriched their lives by giving them a feeling of being needed and useful. Since World War II disabled persons have been given a purpose in life due to the excellent work of re-

habilitation centers. As Auxiliary members we might aid these handicapped people by publicizing their products and arranging for space where they might sell their work.

The Woman's Auxiliary contributed \$113,-584.27 to the American Medical Education Foundation. This year there were 35 more counties contributing than last year. An unusual means of raising money was that of collecting a dollar from friends for a "Quiet Evening at Home." This money was given to the AMEF instead of spending it for entertainment. Members are urged to continue using the appreciation and sympathy cards.

We may be of service to our husbands by keeping informed on legislation as it pertains to medicine and by close cooperation with our local and state societies. Dr. Ernest Howard gave a brief roundup of AMA activities and issues considered. A resolution was adopted supporting participation of doctors in pension plans for the self employed, such as the Jenkins-Keogh bill. Occupational health programs were adopted. Those measures pertaining to social security were sent to the resolution committee for action. No action was taken on Medicare. Dr. Howard urged team work with doctors in the state and county in all program planning.

Mr. Frank Barton, AMA secretary for civil defense, stated there was a need for the American people to be informed, trained and organized in civil defense. In discussing the bill, HR 2125, on civil defense, the purpose of which is to reorganize and shift the main responsibility to the federal government, the AMA recommended that a medical scientist be included on the scientific advisory board, and that this board be increased to include representatives from the medical profession, hospital, and public health groups. Emphasis was put on the medical aspects of civil defense, such as the training of personnel for the care of mass casualties, adequate medical supplies, stockpiling of blood, plasma and vaccines, sanitation provisions to cope with communicable diseases and other public hazards. The AMA feels that a strong civil defense requires positive action by the federal government with emphasis on increased federal leadership. Civil defense is an integral part of national defense, and the federal government has a direct responsibility whether it is administered jointly with the states or with the states in a supporting role.

Mrs. Jean Wood Fuller, Director of Women's Activities on Civil Defense, emphasized the need for home, community and state preparedness. There should be food supplies, such as a "grandma's pantry," containing sufficient food and water for seven days and a three-day evacuation survival kit in the trunk of the family car with food, water, blankets, first aid kit, etc. Each community has a responsibility to be prepared with public shelters in case of radiological hazards. In the case of your own home, use might be made of a windowless hallway as a shelter.

The discussion on recruitment brought out suggestions as to how Future Nurse clubs could be of service to their communities, such as making dressings for cancer patients, making toys for hospitalized children, reading to the aged and blind or adopting a "grandparent" whom they could take for walks and help in different ways.

The particular aspects of safety that were stressed were drivers' training programs in high schools, safety in the home, inaugurating bicycle safety programs and safety features on automobiles.

Mrs. Paul Craig, Wyomissing, Pa., was installed as national president at the closing session on Thursday. Her theme for this year is "Health is a Joint Endeavor." Mrs. Craig said it was her hope that the members of the Women's Auxiliary will extend home-making in matters of health into community life just as they practice it for their families.

On Friday morning a post-convention workshop to make plans for the coming year was held for National officers, state presidents and presidents-elect.

Joining me as delegates at the convention were Mrs. Jesse Hamer of Phoenix, Mrs. Melvin Phillips of Prescott and Mrs. William Phillips of Yuma.

Mrs. Charles S. Powell

Col. Frank B. Rogers, head of the National Library of Medicine, told the subcommittee headed by Senator Lister Hill (D., Ala.) that no federal medical agency serves the future of medical research "more intimately and more widely than does the unequalled collection of books, journals and bibliographic services brought together in the National Library of Medicine." Note: the library's operating budget for the next year is \$1,450,000.

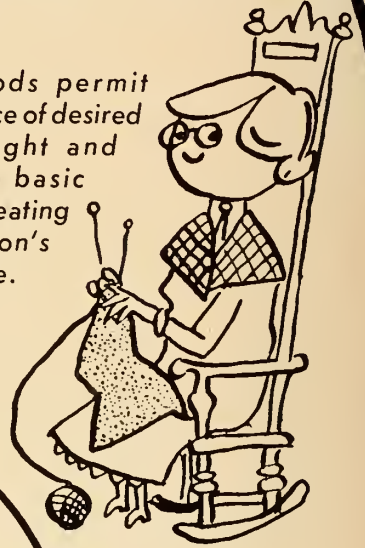
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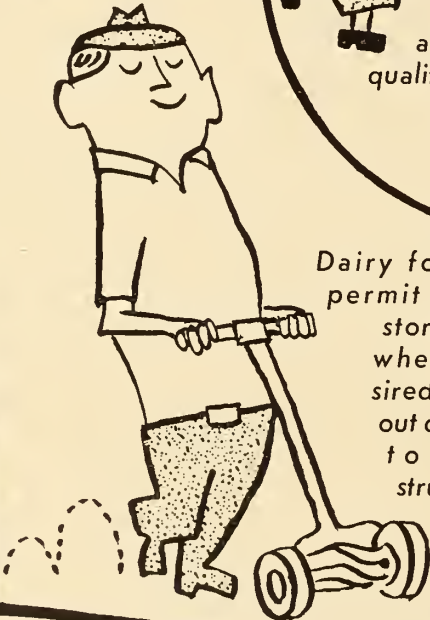


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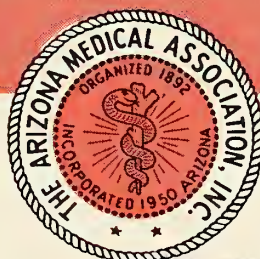
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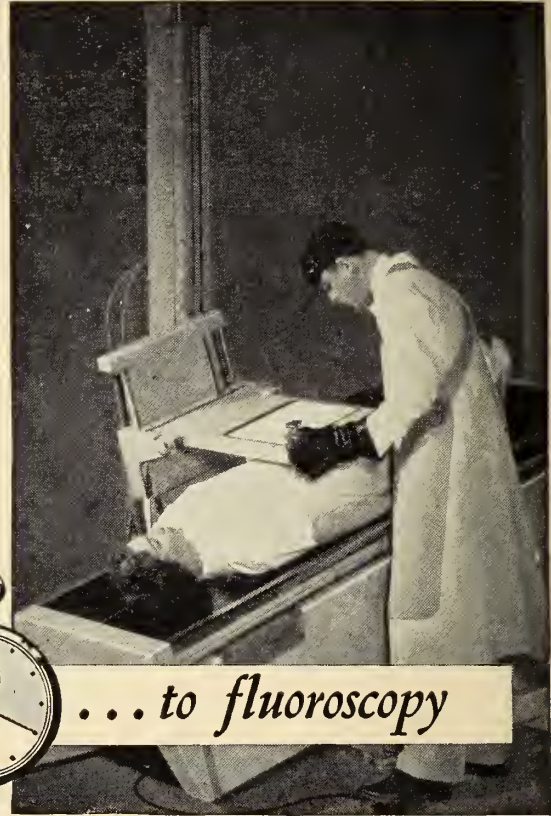
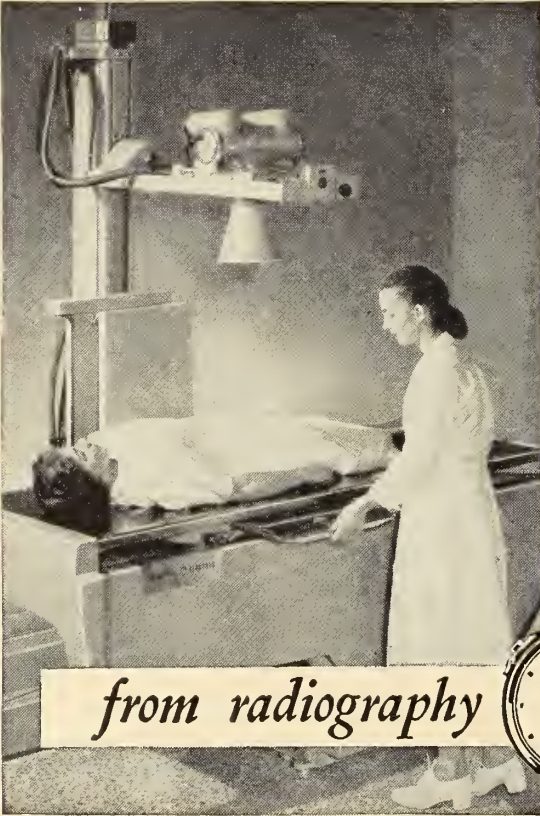
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Original Articles

NOTES ON THE HISTORY OF CLINICAL THERMOMETRY

By Hugh H. Smith, M.D., M.P.H.

Tucson, Arizona

(Continued from the Sept. '57 issue, Arizona Medicine.)

NOTHING had been done in clinical thermometry during the century since Sanctorius until Boerhaave made some sporadic use of Fahrenheit's thermometers in his Leyden clinic. Hermann Boerhaave was the first great bedside teacher of clinical medicine, and a man of wide culture. His genius so raised the fame of the University of Leyden, especially as a school of medicine, that it attracted outstanding students from all parts of Europe. Among these were Gerhard van Swieten (1700-1772) and Anton de Haen (1704-1776), founders of the Old Vienna School of Medicine. Both used Fahrenheit's thermometer, but de Haen seems to have been far more impressed by the usefulness of this new tool. In his 15-volume treatise on hospital therapeutics, "Ratio Medendi", which appeared from 1758-1769, are scattered numerous observations on clinical thermometry. He noted among other things: (1) the morning fall and evening rise of temperature in fever patients; (2) the elevation of temperature in the algid stage of chills; and (3) the therapeutic indications in temperature changes and the recognition of a return to normal temperature as indicating convalescence(11).

These observations exerted no influence upon

his contemporaries. His new doctrines were soon forgotten. It is left for us to recognize the value of his labors and to see how far he was in advance of his age.

The long delay in recognizing the value of the thermometer in clinical medicine is explained by the mistaken concepts of disease that prevailed. The dogma of Innate Heat coming from Aristotle and accepted by Galen governed the thinking of medical men until well into the 17th century. According to this hypothesis, the heart is the heat center of the animal system. Respiration was regarded as a cooling process. Even after Harvey discovered the circulation of the blood, he could not understand why the blood should have to flow around the body so rapidly. The aphorisms of Hippocrates, the dogmatisms of Galen, and the canons of Avicenna formed the basis of medical teaching.

Osler(12) sums up the state of medicine shortly after the first introduction of the thermometer into clinical use, as follows: "The middle of the 17th century saw the profession thus far on its way — certain objective features of disease were known, the art of careful observation had been cultivated, many empirical reme-

dies had been discovered, the coarser structure of man's body had been well worked out, and a good beginning had been made in the knowledge of how the machinery worked — nothing more. What disease really was, where it was, how it was caused, had not even begun to be discussed intelligently."

The growing body of knowledge in physics and chemistry led to attempts to devise systems of medicine based on these new concepts. To quote Osler again, "the profession was literally ravaged by theories, schools and systems, iatromechanics, iatrochemistry, humoralism, the animism of Stahl, the vitalistic doctrines of van Helmont and his followers."

According to the chemists, all phenomena of life, both in health and disease, could be explained by chemical ferments contained in fluids of the body. In their thinking, diseases resulted from acrid alkalinity or acidity of the humors, with the morbid causes simply increasing the alkalinity or acidity in various ways. Others tried to explain life and disease by means of mechanical theories. Locomotion, respiration and digestion (the grinding and crushing action of the stomach) were treated as purely mechanical processes.

In Scotland, George Martine of St. Andrews, educated in medicine in Edinburgh and Leyden, published in 1740 a little book of "Essays Medical and Philosophical"(5). Weir Mitchell describes this volume as "one of those notable little essays which ought to have had an immense influence." These essays already cited on the historical side of thermometry, show Martine to be remarkably ahead of his time in his concepts of body heat. He expresses the view that heat in man varies in degree and not in kind. The doctrine of specific heat, which held that each disease had its own kind of fever, had a tremendous hold on medical minds. In expressing such advanced views on the nonspecificity of heat, Martine paid full credit to a remarkable Spanish physician of the early 16th century, Gomez Pereira (ca. 1500-?), who had shown great independence of spirit in combating all forms of authoritarianism and placed his trust on experience. He objected strongly to accepting the work of Galen as final in medicine and

taught that fever differs not in kind from natural body heat, but only in intensity.

Martine makes fun of those who gravely speak of the liver burning up the bile and of the heart burning the hand of those who touch it like a red-hot poker, or of the stomach boiling food like a kettle. He fortifies his conclusions with many observations with the thermometer on men and animals and shuns "the slippery and enchanted ground of unfounded theory." As with de Haen, this looks like the beginning of a practical use of the thermometer in medicine. The germ of real clinical thermometry is in some of his sentences. But again it falls into disuse, while medicine awaited for better understanding of the nature of disease.

About 1750 Benjamin Franklin (1706-1790) wrote that although temperature of the air was 100°, his own body was 96°, proving to him that warm-blooded animals had the power of maintaining a fixed temperature(13).

A French physician, Dr. Ballay, began in 1762 to measure the temperature in disease with a thermometer by determining the temperature of freshly-voided urine(13).

The true rate of advance in medicine is, however, not to be measured by the work of single men, but by the practical capacity of the mass. How useful, how simple it seems to count the pulse and respiration or to put a thermometer under the tongue, and yet it took in one case a century, and in another far more before "the mass of the profession learned to profit by the wisdom of the few." There is a certain sadness in these stories of the failure of long-neglected inventions or discoveries to make on their time any permanent impression of their real usefulness. Weir Mitchell in his picturesque language states, "I have seen how strong was the resurrective force which now and then existed in some little essay long neglected, how from it, as from seed, arose in after years a fresh growth of vitalizing thought, and how this story repeats itself over and over, until at last, what one knew and valued becomes the riches of all."(1)

Steady progress in all branches of science, especially physiology and chemistry and finally pathology, slowly began to bring sanity into medical practice. One of the men most respon-

sible for bringing a better understanding of disease was Giovanni Battista Morgagni (1682-1771). In the words of Osler, "Into this metaphysical confusion Morgagni came like an old Greek with his clear observation, sensible thinking, and ripe scholarship. Upon this solid foundation the morbid anatomy of modern clinical medicine was built." (12)

Priestley and Lavoisier brought the "pathetic search for oxygen" to its triumphant achievement in 1771. Then followed the publication by Lavoisier and Laplace ascribing the cause of animal heat to the chemical combination of oxygen, carbon and hydrogen in the lungs. Thus the doctrine of innate and of specific heats received their death blow and the seat of warmth was placed in the lungs. Gradually the physiology of respiration and of metabolism became clearer over the next few decades as exact biochemical and physiological methods were evolved by Liebig, Rubner, and a host of others.

Before proceeding to the climax of the story, it is well to call attention to a work that appeared at the close of the 18th century which was singularly free from mere theories and, in the highest sense of the term, practical. This was the "Medical Reports" of James Currie (1756-1805), a noted practitioner of Liverpool. For the first time since de Haen and Martine, temperature observations were used for medical purposes, especially for the therapeutic indications they afforded. Currie strongly advocated cold baths in the treatment of fevers. He used the thermometer to establish carefully the time of applying the bath and to regulate its duration. In fact, thermometry pervades the whole of Currie's practice. He discarded the language of theory and speaks with the clear phraseology of a careful experimenter. His writings are described by Weir Mitchell (1) as a work of absolute genius. His theories are so far ahead of his times that his German translator points them out as a "glaring example of the miserable state of medicine in England."

An Englishman, William Arnold, M.D., settled in Jamaica in 1815, and in 1840 published a book entitled "A Practical Treatise on Bilious Remittant Fever, Its Cause and Effects, etc.," in which he gives temperature records taken in 1824. He states that temperature records were

taken of every class of residents in health and in disease. Dr. Arnold says, "I believe there is no study more calculated to improve the healing art, or to throw more light on the nature of febrile diseases, than a minute attention to the state of the temperature of the system." (13)

The next great impetus to clinical medicine came from France. The aim of the Paris School was not merely to discover new signs of disease, but to correlate them with the bodily lesions underlying them as these were revealed at autopsy (14). Thus the notion of specific disease categories was born. A period of great intellectual activity followed upon the development of this new approach, and no greater revolution in medicine has ever occurred than that which marked the opening quarter of the 19th century.

In 1835, two French research men, Antoine Becquerel (1788-1878) and Gilbert Breschet (1784-1845), published results of studies on human temperatures obtained by means of a sensitive thermo-electric apparatus. They established that the mean temperature in health is 37° C. or 98.6° F. (15)

During this time of towering clinicians, Chomel, Bichat, Broussais, Louis and Laennec, attention to thermometry was sporadic, but as knowledge of disease entities became more precise, its value was more apparent. Gabriel Andral (1797-1876), one of the leading clinical teachers of his times, recognized about 1840 the value of the thermometer at the bedside, and he alone since the time of Currie perceived that amid all the apparent uncertainty of the fluctuations of temperature in disease, there was a reign of law.

Physiological studies multiplied and the list of investigators contains the distinguished names of Flourens, Magendie, Helmholtz, and Donders. From the foremost chemistry laboratory of the time, Justus von Liebig (1803-1873) taught that the heat of the body is the result of the processes of combustion and oxidation performed within the organism. "The foundations laid by Lavoisier received from Liebig an extended and well-proportioned superstructure." (16)

Zimmerman, a military surgeon in Hamm, is

accorded credit for having duly estimated the value of thermometry at a time when it was generally neglected. He published papers of value over a period of years(16). It was not until papers by Ludwig Traube (1818-1876) and Friedrich von Barenprung reporting their extensive observations were published in 1850 and 1851 respectively that real attention began to be paid to the possibilities of the thermometer as a diagnostic aid(16); but it was left for Traube's pupil, Carl Wunderlich (1815-1877) professor of medicine at Leipsig, "not only to establish this branch of investigation for the first time upon a deep and lasting basis, but also to build up a very great part of the edifice, and to point out with clearness the directions in which future labor must be applied."(18)

Beginning the use of the thermometer in his clinic and private practice at the mid-point of the century, Wunderlich carried out millions of temperature determinations on thousands of patients over a period of some 16 years before the writing of his book, a permanent medical classic. "The Course of the Temperature in Diseases; A Guide to Clinical Thermometry" appeared in 1868 and since that time the use of the thermometer in medicine has been firmly established. Wunderlich stated his purpose clearly: "Conviction of the immeasurable and heretofore unanticipated practical value of thermometry became immovably fixed in my mind, and it became the object of my endeavors to awaken and establish this conviction in the minds of others."

For his studies, Wunderlich used a mercury thermometer with a Centigrade scale. The axilla was the universal place of application of the instrument, the closed fist being regarded as unreliable as an indication of body temperature, the mouth also due to currents of air, and the rectum and vagina were considered "indecent." From six to 10 minutes were allowed for each temperature observation.

Wunderlich established certain principles which are the basis of clinical thermometry(16).

(1) The consistency of temperature in healthy persons, with one degree centigrade regarded as the average diurnal variation, the lowest point in the diurnal range coming in the early morning, and the high point in the evening.

(2) The variability of temperature in disease is according to fixed laws, and is determined by the nature, and degree of the disease or upon the increase or diminution in the degree.

(3) The importance of continuous 24-hour temperature records of each patient based on several observations each day.

Fielding H. Garrison states, "Wunderlich found fever a disease and left it a symptom."(17)

For the general acceptance of clinical thermometry by the medical profession, two tasks remained: (1) diffusing of knowledge of the new method, and (2) the development of a more convenient and accurate instrument. In the medical journals paper after paper followed the publication of Wunderlich's book. In Britain, Sir William Aitken (1825-1892) in his popular "Handbook of the Science and Practice of Medicine" gave strong support to the regular use of the thermometer. Sir Thomas Clifford Allbutt (1836-1925) exerted perhaps an even greater influence. He is credited with designing and introducing around 1866 a convenient pocket-sized thermometer to replace the long, cumbersome ones in use up to that time. Allbutt wrote about thermometry, as well as practiced it on his patients(18).

The profession, conservative as always, moved slowly, and one finds Sir Samuel Wilks (1824-1911) saying in his "Biographical Reminiscences" (19), "In 1870, I requested the Superintendent of Guy's Hospital to procure a clinical thermometer. It was nearly a foot long and was such a novelty that it was taken to the meeting of the British Medical Association for exhibition, where members regarded it with much curiosity and interest, although I am sorry to say, one or two with ridicule."

In America, little was done to promote the use of the clinical thermometer before Wunderlich's time. Benjamin Franklin conducted a series of experiments on himself in regard to the effect of hot and cold water on the body heat. James Currie says of him, "The authority of the American Bacon is of great weight in every branch of science he touches and particularly in respect to immersion in water, for doubtless he spent more time in that element than did any philosopher of modern days."(20)

William Beaumont (1785-1853), our "backwoods physiologist," made many observations of the temperature of the interior of Alex St. Martin's stomach. These were probably prompted to some extent at least by the old theory that the stomach is the seat of the heat of the body. Beaumont says (13): "I introduced the tube of the thermometer (Fahrenheit) through the perforation into the stomach — in 15 minutes the mercury rose to 100° and remained stationary. This I determined by marking the height of the mercury on the glass with ink, and after withdrawing it, placed it on a graduated scale."

Prior to the War Between the States, nearly all productive use of thermometry was made in the South. In New Orleans, an eminent physiological and clinical investigator, Dr. Bennet Dowler (1797-1879), as early as 1840 began studies on the hyperpyrexia of sunstroke. He was also especially interested in the rise of body temperature immediately after death and spent hours in the morgue making observations on "postmortem fever." His literary style is engaging, as when he speaks of himself pursuing "dismal researches on the frontiers of death, silent, alone, sitting for hours on a coffin among dead bodies — a pursuit that honest Charon, ferryman to the ghosts on the River Styx, would scarcely undertake." (21)

Dr. Samuel L. Metcalfe (1798-1856), graduate of Transylvania University in Kentucky, wrote a two-volume treatise published in London in 1843 on "Caloric: Its Agencies in the Phenomena of Nature," discussing critically contemporary doctrines of animal heat.

During the 50s, another Southerner, Dr. Joseph Jones (1833-1896), also of New Orleans, began studying animal heat by means of the thermometer. He also made use of the same instrument in his clinical work. During the Civil War he employed clinical thermometry frequently and consistently in the hospitals of the Confederates. He was ordered by the Surgeon General of the C. S. A. to make a detailed study of the fevers that existed in the military hospitals. These studies were continued after the war in New Orleans and were published in 1875 (22).

Dr. John Shaw Billings (1838-1913), a dis-

tinguished Army surgeon of the North, has written, "When I entered the Army at the beginning of the Civil War, I had two instruments which the other surgeons did not possess: (1) a set of clinical thermometers, and (2) a hypodermic syringe. The syringe was in constant demand. The thermometers were troublesome and little used". (17)

In New York, Dr. Austin Flint (1812-1886) introduced thermometry into hospital routine in 1865 (23). He employed the charts designed by Dr. J. M. Da Costa of Philadelphia (1833-1900), correlating the three vital signs; i. e., respiration, pulse rate, and temperature curve.

Perhaps the most important influence in educating both the medical profession and the public in the value of thermometry was an emigre French psychiatrist, Edouard Seguin (1812-1880). Seguin took up the cause with zeal and wrote article after article. In 1873, appeared his treatise "A Manual of Thermometry for Mothers, Nurses, Hospitalers, etc., and All Those who have Charge of the Sick and the Young." He pleaded with his colleagues thus, "With Mothers, I think it is our duty to teach everyone of them who can be taught, not only the use, but the philosophy of prophylactic thermometry; by which they would be rendered competent to foresee, and often ward off the perils that the thermometer predicts, always several hours in advance, as the barometer does a storm. Then let the hour of family trials come, or contagious disease invade the home; and by your side you have the faithful woman. Neighbors and quacks proffer in vain their nostrums, she stands by her thermometer knowing that a calm record of a day's fever brings more hope than does a disheveled therapeutics." Seguin's next book, "Medical Thermometry and Human Temperature," appeared in 1876 and was perhaps the most important factor in diffusing information on the subject in this country.

Equal in importance to the wide-spread understanding of the value of thermometry in medicine was the development of a convenient and reliable instrument. The thermometers used during most of the 18th and early 19th centuries for occasional observations on humans were generally of the meteorological type. John Hunter (1728-1793) is said to have had several

small mercurial thermometers produced around 1766 for his experiments on the body heat of animals(13).

During the latter part of the 18th century, a number of maximum and minimum, or registering, thermometers were devised. Lord Charles Cavendish produced an ingenious but complicated instrument in 1757. James Six proposed a more dependable type of design around 1782. His instrument had small movable indices operated by the rise or the fall of the surface of the thermometric liquid. For resetting a small magnet was used to draw the metal indices back down to the surface of the mercury. A still simpler instrument, working on the same principle but constructed in two separate parts, was described in 1790 by Daniel Rutherford, professor of medicine and botany at Edinburgh University. He, however, attributes the actual invention to one John Rutherford, M.D. These thermometers were intended mostly for meteorological observations, so will not be described in any detail.(10)

Another type of maximum thermometer was produced by Phillips and independently by Francisco Walferdin (1795-1880), a French physicist, about 1836. This instrument was used horizontally. A portion of the mercury column was separated from the rest by a minute air bubble. As the temperature rises, the detached portion of the column is pushed forward, but does not retreat when the temperature falls(24). Early clinical thermometers used this principle in their design.

Negretti and Zambra devised the type of maximum thermometer now usually employed for clinical work. Their instrument had a constriction in the tube near the bulb, past which the mercury easily expands, but cannot return when the temperature falls, since the column breaks at the narrowed point when the fluid begins to contract(24).

About 1860 the Germans began producing clinical thermometers with a printed scale inserted between two glass tubes. These were apparently inconveniently long and were used mostly for axillary readings. Dr. P. C-E. Potain (1825-1900) of Paris, described a thermometer on which the graduations were etched by hydro-

fluoric acid. It was made by Alvergnat Brothers for Potain and named after him(13). At about this same time the production of clinical thermometers was begun in London(25).

For a time adoption of the thermometer for clinical use in America was slow due to the expense and scarcity of the instruments. According to Seguin not more than 50 per year were imported around 1867. These came from London at a cost of \$3-\$4 each. The manufacture of clinical thermometers in this country probably began in the 1870s in New York. The earlier thermometers were made of round, non-magnifying glass. Patents covering the use of magnifying glass were issued about 1880. These early American thermometers employed the Phillips-Walferdin principle of placing a small bubble of air in the mercury column.

Today clinical thermometry is universally recognized as the very basis of modern medical practice. Millions of thermometers are produced annually and sell for comparatively low prices. Their manufacture is a tedious process requiring a total of 70 different operations. The self-registering device now usually depends upon a constriction or contraction at the base of the tube $\frac{3}{8}$ of an inch above the bulb produced by a highly-skilled glass blower with a finely pointed flame. The slightest deviation from the perfect contraction results in a "retreater" if the bore is not closed enough, or a "hard shaker" if it is closed too much. The U. S. Bureau of Standards has set up regulations that have been accepted by the manufacturers to govern the production and certification of clinical thermometers. The better grade of these instruments is each accompanied by a certificate bearing its individual number stating that this particular thermometer has been tested and found acceptable in accordance with government standards.

Unfortunately, most clinical thermometers used in Great Britain and the U.S.A. still bear the Fahrenheit scale. In this connection, it is interesting to read the words of Sir Clifford Allbutt written some 90 years ago: "It is a matter of regret that these instruments are all made on the Fahrenheit scale. It is an inconvenient scale in itself, and it has the additional disadvantage of making English and foreign observers mutually unintelligible. There really is

no excuse for its retention, as no human being supposes it to have any merit of its own. The new scale (Centigrade) is very easy to learn, and the change would not unsettle the mind of the nation, as the use of thermometers is confined to a minority of competent persons.”(18)

Thus the story of clinical thermometry is

brought up to the modern era. The medical profession today is so accustomed to accepting the great utility of this indispensable tool that it is almost incomprehensible that its use by physicians in studying their patients was so long delayed. One is indeed impressed by the truth of the saying that the success of a discovery depends upon the time of its appearance.

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THE TREATMENT OF SCORPION STING

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SCORPION sting accidents are of relatively common occurrence in Arizona. (Stahnke 1950). Therefore, we feel that additional data regarding the overall problem of treating the victims should be of some service. The statistics herein presented have been obtained from 235 clinical reports sent in by Arizona physicians following the use of the antivenin manufactured and distributed by the Poisonous Animals Research Laboratory of Arizona State College, Tempe, Arizona under an appropriation of the Arizona state legislature. It is, therefore, issued gratis and distributed through certain depots as indicated in Table 1. We would like to emphasize that the antivenin is distributed free of charge and no physician or patient should be charged for the product. Each therapeutic dose is accompanied by descriptive literature and a clinical report blank. Upon the filling in and returning of the latter to the Poisonous Animals Research Laboratory a replacement for the used vial of antivenin is sent.

Every town or community that requests antivenin establishes one or more points of distribution depending on the size of the population. Using this depot system prevents an undue amount of the antivenin being idle in the physician's office and possibly becoming out-dated, but still making the product readily available.

Tables 2 through 6 contain some interesting data. The age group that most frequently falls victim to the scorpion's sting is 1-5 years. As children grow beyond "ground level" stage, scorpion sting accidents decrease. Ironically, 66 per cent of the cases are in the age group from 0 to 15 years, the ages during which scorpion sting is potentially fatal to individuals of normal health. This corresponds closely with the weights shown in Table 3 in which 63.5 per cent of the cases are 100 pounds or less.

It is commonly held that members of the minority races, because of supposedly more squalid living conditions, are victims more often of scorpion sting than the so-called "white" race. Table 5 shows 63 per cent of the patients were

of the white race. It might be argued that this was because the members of the minority race could not afford medical attention and simply "sweat-out" the experience. To some extent this might be true but the white race is not without its quota of low-income members. Observation would lead one to believe that the more abundant experiences in tropical and sub-tropical habitats may have taught the minority races a greater degree of caution and alertness.

Out of the 235 clinical reports, 216 vials of antivenin were actually injected. The other 19 were not used because of accidental breakage, or the patient succumbed before the antivenin could be given, etc. I.M. injections were given in 198 cases, I.V. in five and S.C. in one. Serum reaction of patients proved to be unusual. Out of 200 reports in which this information was given, 194 showed no reaction whatsoever and six gave a mild reaction to the skin test. Indications of hypersensitivity reported for these six



Fig. 1 Distribution of serum depots and home addresses of people stung by scorpions. "o" = depots; "." = patients.

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| TABLE I | | No. of |
|------------------------|----|---------|
| Serum Depot Localities | | Reports |
| Ajo | 3 | |
| Avondale | 0 | |
| Bagdad | 3 | |
| Benson | 4 | |
| Bisbee | 0 | |
| Bowie | 0 | |
| Buckeye | 2 | |
| Casa Grande | 0 | |
| Chandler | 2 | |
| Coolidge | 1 | |
| Cottonwood | 0 | |
| Douglas | 0 | |
| El Mirage | 0 | |
| Florence | 2 | |
| Fort Huachuca | 0 | |
| Gila Bend | 3 | |
| Gilbert | 3 | |
| Glendale | 17 | |
| Globe | 9 | |
| Hayden | 0 | |
| Keams Canyon | 0 | |
| Kingman | 0 | |
| Litchfield Naval St. | 2 | |
| Luke AFB | 2 | |
| Mesa | 3 | |
| Miami | 11 | |
| Morenci | 0 | |
| Parker | 33 | |
| Payson | 1 | |
| Peoria | 0 | |
| Pima | 3 | |
| Phoenix | 80 | |
| Prescott | 0 | |
| Sacaton | 4 | |
| Safford | 9 | |
| San Carlos | 0 | |
| San Manuel | 0 | |
| Scottsdale | 2 | |
| Sedona | 7 | |
| Sells | 0 | |
| Stanfield | 1 | |
| Superior | 5 | |
| Tempe | 12 | |
| Tiger | 0 | |
| Tolleson | 0 | |
| Tombstone | 2 | |
| Tucson | 3 | |
| Wellton | 0 | |
| White River | 4 | |
| Williams AFB | 0 | |
| Willcox | 0 | |
| Winslow | 0 | |
| Yuma | 2 | |

| TABLE 2 | | |
|---------------------------------|-----|---------|
| Ages of Scorpion Sting Patients | | |
| Age | No. | Percent |
| 0-11 mos. | 10 | 4.4 |
| 1- 5 yrs. | 90 | 40.0 |
| 6-10 yrs. | 32 | 14.0 |
| 11-15 yrs. | 17 | 8.0 |
| 16-20 yrs. | 7 | 3.0 |
| 21-25 yrs. | 8 | 3.6 |
| 26-30 yrs. | 10 | 4.4 |
| 31-35 yrs. | 13 | 5.8 |
| 36-40 yrs. | 7 | 3.0 |
| 41-45 yrs. | 9 | 4.0 |
| 46-50 yrs. | 4 | 1.8 |
| 51-55 yrs. | 6 | 2.7 |
| 56-60 yrs. | 3 | 1.3 |
| 61-65 yrs. | 5 | 2.2 |
| 66-70 yrs. | 0 | 0.0 |
| 71-75 yrs. | 4 | 1.8 |
| | 225 | 100.0 |

| TABLE 3 | | | |
|-----------------------------------|-----|--|---------|
| Weight of Scorpion Sting Patients | | | |
| Lbs. | No. | | Percent |
| 0-20 | 8 | | 4.1 |
| 21-40 | 67 | | 34.0 |
| 41-60 | 30 | | 15.2 |
| 61-80 | 9 | | 4.6 |
| 81-100 | 11 | | 5.6 |
| 101-120 | 12 | | 6.1 |
| 121-140 | 19 | | 9.6 |
| 141-160 | 23 | | 11.7 |
| 161-180 | 11 | | 5.6 |
| 181-200 | 6 | | 3.0 |
| 201 plus | 1 | | 0.5 |
| | 197 | | 100.0 |

| TABLE 4 | | |
|---------|-----|----|
| Sex | | |
| | | % |
| Male | 125 | 57 |
| Female | 96 | 43 |

| TABLE 5 | | |
|----------|-----|------|
| Race | | |
| | | % |
| White | 137 | 63 |
| Colored | 13 | 6 |
| Spanish | 35 | 16 |
| Indian | 32 | 14.6 |
| Japanesc | 1 | .4 |

| TABLE 6 | | | |
|-------------------------|-----|------------------------|---|
| Home Address of Patient | | | |
| ARIZONA | No. | | |
| Ajo | 3 | Saint David | 1 |
| Arlington | 1 | Salt River Reservation | 2 |
| Ashurst | 1 | San Carlos | 1 |
| Bagdad | 1 | San Jose | 1 |
| Benson | 2 | Scottsdale | 5 |
| Buckeye | 2 | Sedona | 6 |
| Central Heights | 1 | Stanfield | 1 |
| Chandler | 2 | Stanton | 1 |
| Coolidge | 4 | Superior | 4 |
| Cork | 2 | Tempe | 8 |
| Flagstaff | 1 | Tolleson | 4 |
| Florence Junction | 1 | Tucson | 3 |
| Fort Thomas | 1 | Vail | 1 |
| Gila Bend | 2 | White River | 3 |
| Gilbert | 4 | Winslow | 1 |
| Glenbar | 1 | Yuma | 1 |
| Glendale | 11 | CALIFORNIA | |
| Globe | 7 | Los Angeles | 1 |
| Goodyear | 1 | Bell | 1 |
| Laveen | 7 | Earp | 1 |
| Lehi Reservation | 1 | El Monte | 1 |
| Litchfield Park | 1 | Maywood | 1 |
| Little Acres | 1 | Parker Dam | 2 |
| Luke AFB | 1 | Puente | 1 |
| Marionette | 1 | Rivera | 1 |
| Mesa | 2 | Wilmington | 1 |
| Miami | 7 | INDIANA | |
| Norwalk | 1 | Elwood | 1 |
| Parker | 20 | PENNSYLVANIA | |
| Peoria | 2 | Pittsburgh | 1 |
| Pima | 5 | MEXICO | |
| Phoenix | 51 | Rocky Point | 1 |
| Sacaton | 1 | | |
| Safford | 1 | | |

SUPPORTING THERAPEUTIC AGENTS USED

I. More than one supporting therapeutic agent:

| | Dosage | Age | Weight | Remarks |
|-------------------------|-----------|---------|--------|------------------------------------|
| 1. Adrenal cortex | ? | 5 yrs. | 50 | Died: Antivenin not given. |
| Adrenalin (1-1000 sol.) | 1 cc | | | |
| Caffine Sodium Benzoate | 486 mg | | | |
| 2. Alinate elix. | 65 mg | 14 mos. | 22 | |
| Phenobarbital | 65 mg | | | |
| Nembutal | 34.4 | | | |
| 3. Chlortrimeton | 50 mg | 5 yrs. | 40 | Also stung by red ant. |
| Cortisone | 3 mg | | | |
| Na Phenobarbital | 487.5 mg | | | |
| Pentothal | 125 mg | | | |
| ACTH | 20 units | | | |
| 4. Avertin | 2 cc | ? | 35 | |
| Na Luminal | 130 mg | | | |
| Na Amytal | 65 mg | | | |
| 5. Codeine | 32.4 mg | 21 yrs. | 130 | Antivenin reported as ineffective. |
| Demerol | 50 mg | | | |
| Phenaphen No. 2 | 1 cap | | | |
| Nembutal | 195 mg | | | |
| 6. Seconal | 97.4 mg.) | 60 yrs. | 200 | |
| Axotal | Tab ii) | 40 yrs. | 175 | |
| 7. Na Luminal | 130 mg | 10 mos. | 24 | Died: Serum given minutes before. |
| Demerol | 50 mg | | | |
| 8. Na Luminal | 130 mg | 9 yrs. | 70 | Severe pain and convulsions. |
| Demerol | 25 mg | | | |
| 9. Na Luminal | 162.4 mg | 10 mos. | 22 | Severe convulsions. |
| Demerol | 20 mg | | | |
| 10. Luminal | 130 mg | 11 yrs. | 65 | |
| Benadryl | 50 mg | | | |
| 11. Avertin | 1.2 cc | 4 yrs. | 26 | |
| Phenobarbital | 32.4 mg | | | |
| 12. Phenobarbital | 32.4 mg | 4 yrs. | 35 | |
| Ca glueconate 10% | 8 cc | | | |
| 13. Na Phenobarbital | 195 mg | 4 yrs. | ? | |
| Benadryl | ? | | | |

II. One supporting therapeutic agent.

| | Dosage Range | No. of Patients | Remarks |
|-----------------------------------|---------------------|-----------------|-------------------------------|
| 1. Amytal or Amobarbital | 130 to 300 mg | 3 | |
| 2. Aspirin | ? | 1 | |
| 3. Avertin or Tribromoethanol | 2 cc | 2 | |
| 4. Benadryl | 30 - 60 mg | 8 | |
| 5. Bufferin | ? | 1 | |
| 6. Calcium glueconate (10% sol.) | ? | 1 | |
| 7. Chloral Hydrate | 487.4 mg | 1 | Not stung by lethal scorpion. |
| 8. Chlortrimeton | 30 mg | 2 | |
| 9. Codeine | 16.2 mg | 1 | |
| 10. Demerol | 20 - 100 mg | 5 | All had severe symptoms. |
| 11. Dilantin | 97.4 mg | 1 | |
| 12. Morphine Sulfate | 11.0 mg | 1 | Used 5 hrs. after antivenin. |
| 13. Nembutal | 32.4 to 292.4 mg | 25 | |
| 14. Pentothal Sodium | 780 mg | 1 | |
| 15. Phenobarbital (Luminal) | 16.2 mg to 650.0 mg | 24 | |
| 16. Phenobarbital. Elixir | 1 dram | 4 | |
| 17. Seconal Na (or Secobarbital) | 48.6 mg to 250 mg | 10 | |
| 18. Sodium Bartisol | 32.4 mg | 1 | |
| 19. Na Phenobarbital (Na Luminal) | 32.4 mg to 975.0 mg | 74 | |
| 20. Thorazine | 25 mg | 1 | |

For the family physician acting in an advisory capacity to newcomers to the state, the manner in which these patients were actually stung might prove helpful. This data, considerably condensed is given below:

| Age (mos.) | Sex | Time | Part of body & circumstances when stung. |
|---------------|-----|---------|--|
| 3 | m | 2 a.m. | Leg while asleep in crib. |
| 9 | f | 2 p.m. | Abdomen while lying in bed. |
| 10 | m | 8 p.m. | Top of hand while lying on floor. |
| 11 | m | 6 p.m. | Hand while playing on floor |
| 12 | f | 9 p.m. | Sole of foot. Scorpion was in shoe. |
| | m | 6 p.m. | Thumb. Reached for pan in kitchen cabinet; scorpion in pan. |
| 14 | f | 11 p.m. | Hand. While sleeping on floor with mother. |
| 15 | f | 8 p.m. | Chest and abdomen. While playing on floor. |
| 16 | f | 10 a.m. | Hand. reached for doll; scorpion under doll's clothes. |
| | m | 10 p.m. | Foot. Scorpion fell off ceiling into bed. |
| 18 | f | 2 a.m. | Leg. Sleeping on floor of jail with mother. |
| 20 | m | 9 a.m. | Finger. Lifted board in yard. |
| 21 | m | 2 p.m. | Hand. Picked up damp cloth. |
| 23 | m | 9 p.m. | Foot. While walking on sidewalk. |
| (years) | | | |
| 2 | m | 8 a.m. | Shoulder and lower back. Stung while at play. |
| | m | 1 p.m. | Thumb. Picked up sprinkler; scorpion in sprinkler. |
| | m | 5 p.m. | Thigh. While dressing; scorpion in clothes. |
| 3 | m | 1 a.m. | Thigh. Scorpion crawled on him while sitting in chair. |
| | f | 9 a.m. | Abdomen. While dressing. |
| 3 | f | 8 p.m. | Foot. Playing in rock pile. |
| | m | 9 p.m. | Finger. While lying on rug watching TV. |
| | m | 11 p.m. | Hand. Reached up on top of dresser for toy. |
| 4 | m | 8 a.m. | Leg. Scorpion crawled on leg while eating breakfast. |
| 4 | m | 11 a.m. | Chest. Playing in garage; scorpion under board. |
| | m | 6 p.m. | Hand. While picking bark off tree; scorpion was in crevice. |
| | f | 11 p.m. | Finger. While opening box of old clothes. |
| 5 | f | 9 a.m. | Finger. While playing in sand. |
| | f | 6 p.m. | Finger. Playing in grass. |
| | m | 10 p.m. | Wrist. Playing around rocks in desert. |
| 6 | m | 11 a.m. | Finger. Crawled under bed and was stung. |
| | m | 2 p.m. | Hand. On school grounds; scorpion hiding in dust rag. |
| 7 | f | 8 p.m. | Back. Scorpion in clothing. |
| 8 | f | 3 p.m. | Foot. Scorpion on towel while helping wash dishes; mother saw it and tried to brush it off; landed on foot of patient. |
| 9 | m | 8 a.m. | Hip and thigh. Scorpion in trousers. |
| | f | 11 a.m. | Shoulder. In sleeve of coat. |
| 10 | f | 9 p.m. | Foot. Walking barefoot in house. |
| 11 | m | 10 a.m. | Hand. Stung finger as scorpion was brushed from trousers. |
| 12 | m | 10 a.m. | Thumb. Playing with calf skin. |
| | f | 7 p.m. | Finger. Reached into floor drain. |
| 13 | m | 11 p.m. | Finger. Sat on rock in South Mountain Park. |
| 14 | f | noon | Thumb. Picked up newspaper. |
| 15 | f | 2 p.m. | Hand. Picked up piece of Kleenex. |
| 17 | m | noon | Forearm. Lying on grass near building. |
| 21 | f | noon | Finger. Working under the car. |
| 22 | m | 4 p.m. | Leg, below knee. Sitting on chair. |
| 24 | f | 11 a.m. | Hand. While working in yard. |
| 25 | f | 3 p.m. | Arm. Scorpion under canvas. |
| | f | 4 p.m. | Lower leg. Scorpion ran up pants leg in cotton field. |
| | m | 10 p.m. | Finger. While removing soiled levis from hamper. |
| 27 | m | 5 p.m. | Thigh. While loading hay. |
| 28 | m | 11 a.m. | Hand. While reaching in trash barrel. |
| 29 | f | 3 a.m. | Wrist. Handling used abobe bricks. |
| 31 | f | 9 a.m. | Foot. Walking across rug and stepped on scorpion. |
| 33 | f | 10 a.m. | Finger. Tried to kill scorpion with piece of tissue. |
| 35 | m | 9 a.m. | Hand. While sorting laundry. |
| 38 | f | 3 p.m. | Thigh. Was lifting flagstones and scorpion crawled up leg. |
| 43 | m | 9 a.m. | Hand. In vegetable bin. |
| 44 | m | 9 a.m. | Foot. In shower bath. |
| 44 | f | 10 a.m. | Breast and chest. Scorpion fell from drapes, down neck and inside brassiere. |
| 45 | f | 8 a.m. | Finger. Reached into paper sack which had been on ground overnight. |
| 47 | f | 9 a.m. | Finger. Reached under damp board. |
| 53 | m | 11 a.m. | Finger. Unboarding windows of cabin. |
| 58 | f | 10 a.m. | Thumb. Patient was cleaning floor furnace. |
| 62 | m | 9 p.m. | Arm. Brushed against bush. |
| 62 | f | 9 p.m. | Foot. Walking in grass — barefoot. |
| 73 | f | 9 a.m. | Foot and finger. Picked up wash cloth in sink and was stung on finger; threw scorpion to floor and got stung on foot. |
| 74 | m | 6 p.m. | Knee. Scorpion crawled up pants. |
| 75 | m | 10 a.m. | Toe. Walking barefoot in bathroom. |

patients were as follows: "headache," "2 cm area of erythema," "slight erythema," "skin test slight positive-wheal enlarged," "induration and erythema at site of skin test," "slight reaction-itching and faint urticaria."

In the treatment of cases covered by the clinical reports, 203 patients were adequately cared for with one 3 ml vial, 12 patients required two 3 ml vials while a third, who was brought to the physician in a very serious condition, was given three 3 ml vials, one I.V. and two I.M.

Among all the patients receiving the antivenin, only two died. In fairness to the efficacy of the serum, some of the details of these cases are given below:

Case No. 1: Eighteen months, female, 16 lbs. Recovering from severe diarrhea. Child was sleeping on floor of jail with the mother when stung. Received only 2 ml of antivenin (instead of 3 ml) plus 300 mg. of Na Amytal.

Case No. 2: Ten months, female, 24 lbs. Treated by two different physicians. First physician administered two grains Na Luminal and 50 mg. Demerol approximately 70 minutes after scorpion sting. Second physician gave one 3 ml vial approximately five minutes before child expired.

Out of 216 patients given the antivenin, 148 received supporting therapy. This is in keeping with the following recommendations accompanying each vial:

"Supportive Therapy: Best results are normally obtained if the administration of sodium phenobarbital to the point of relaxation precedes the injection of the serum. Stopping the convulsions is accomplished by giving massive doses of barbiturates. Sodium phenobarbital is commonly used. Morphine and Demerol are contraindicated. Either one will produce a lethal effect even in the presence of a sub-lethal dose of *Centruroides sculpturatus* venom.

The selection of therapeutic agents will be of interest and are presented below:

Table 7 indicates that scorpion sting accidents may occur in any month of the year. With the installation of better air-conditioning systems and the more uniform temperature in homes throughout the year, greater numbers of sting accidents can be expected outside of the summer season. Since scorpions cannot survive in high temperatures, more will be attracted to the well refrigerated homes

TABLE 7

Distribution of Scorpion Sting by Months

| Month | No. | Percent |
|----------------------|-----|---------|
| January | 8 | 3.7 |
| February | 5 | 2.3 |
| March | 6 | 2.8 |
| April | 12 | 5.5 |
| May | 25 | 11.5 |
| June | 38 | 17.4 |
| July | 38 | 17.4 |
| August | 32 | 14.7 |
| September | 21 | 9.6 |
| October | 19 | 8.7 |
| November | 7 | 3.2 |
| December | 7 | 3.2 |
| No month given | 7 | |
| | --- | --- |
| | 225 | 100.0 |

Conclusions: We realize that physicians are very busy people. Therefore, the care exercised by most of those using the antivenin when giving the data requested by the clinical report form is greatly appreciated. We would, however, like to enter a plea for a more judicious use of the antivenin. Cats are not blessed with large quantities of blood. A hyperimmunized animal will at best provide only about seven therapeutic doses. The antivenin is species specific for *Centruroides sculpturatus* and *C. gertschi*. To administer the antivenin for envenation by other Arizona species of scorpion is a waste of the serum. Swelling, ecchymosis, or erythema at the site of the sting is a strong indication that the offending scorpion was not one of the two lethal species. Hyperesthesia at the site of the sting is positive evidence of this lethal venenation. Even then, where sufficient time has elapsed — approximately 30 minutes to one hour — a child will not succumb if it is not in chaotic convulsions. An adult in normal health, certainly does not need the serum. Actually, the medical risk in giving, instead, some barbiturate is much less than injecting a foreign protein. We feel that a foreign serum is a poor therapeutic agent at its best. Consequently, we are continuing to test other substances with the hope of finding a completely satisfactory chemotherapeutic substitute.

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THE DIAGNOSIS AND TREATMENT OF THE GREAT SIMULATOR, INFECTIOUS MONONUCLEOSIS

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HISTORY. Working out the natural history, the etiology, the signs and symptoms, and the differential diagnosis of this disease has been uncertain, difficult, and tedious. As a matter of fact, there still remains a great deal of information that is unknown to us, yet vital to its understanding and treatment, and probably in no common febrile illness of such wide distribution throughout this country today, has the diagnosis been so frequently missed, and its treatment so improperly handled. In directing a large communicable disease hospital, where I have had the privilege of serving for over 33 years, the old adage of "know syphilis, know medicine," has been replaced with the new adage "know infectious mononucleosis, know medicine," — pertaining of course to the differential diagnosis of the various infectious diseases. It is the great simulator, and no disease enters our hospital that, at times is not exactly simulated by it.

Though Filatow in Russia described an idiopathic lymphadenopathy in 1885, to be followed in 1889 by the German Pfeiffer, who placed the disease on a sound clinical basis and gave it the name glandular fever, it was not until 1908 that Terflinger proved that infectious mononucleosis could occur in adults as well as in children. Even then, it was 1909 before Burns pointed out that small mononuclear elements predominated in the blood in this disease, no account of blood studies having appeared before this time.

Eleven years later, Sprunt and Evans, on the basis of six cases observed by them, described a new disease, which they named infectious mononucleosis, being totally unaware of the work of their predecessors, and believing themselves to be the discoverers of a new clinical entity. They were not alone, for that same year Morley and Tidy noted a transitory lymphocytosis in a boy with glandular fever, which they reported to the Royal Society of Medicine as a new disease. Downey and McKinley were joint authors of a beautifully illustrated article in 1923, which gave a complete description of the abnormal cells of the lymphocytic series occurring

in infectious mononucleosis. This paper was classical and nothing fundamental has been added to it since. Though only children were supposed to have the disease, and adult cases were presumed to be rare, they stressed the large number of adult cases, though others had also pointed this out. Like Longcope, they noted that glandular enlargement was far more marked in younger age groups.

While others suspected the occasional occurrence of encephalitis as a manifestation of infectious mononucleosis, it was not until the article by Epstein and Dameshek in 1931, and by Johannsen in the same year, that a clear description of the neurological manifestations of the disease was given. Probably the next thing of historical import was the anomalous discovery by Paul and Bunnell in 1932, that heterophil agglutinins develop in high titer in human serum during the course of infectious mononucleosis. However, it was discovered later that patients with serum sickness also develop heterophil antibody reactions with the red blood cells of sheep, and that the test is undependable when only low titers are obtained. To correct this, Stuart and associates found that sheep cell agglutinins in normal serum were adsorbed by guinea pig kidney, but not by boiled beef erythrocytes; that the agglutinins in serum of infectious mononucleosis patients were adsorbed by the boiled beef cells, but not by guinea pig kidney; and that those in the serum of persons with serum sickness were adsorbed by both guinea pig kidney and beef cells. By using these adsorption tests, the exact heterophil antibody of infectious mononucleosis could be differentiated from the others, and the correct diagnosis established. Today, the modified Paul-Bunnell test is known as Davidsohn's heterophil antibody test, as he did additional work along this line and summarized the investigations of others in the Journal of the American Medical Association in 1937.

The last contribution of historical interest is that of Isaacs in 1948, who showed that many acute cases of infectious mononucleosis of any

type, after apparent recovery, subsequently remain unduly fatigued; that the disease assumes a chronic, long-continued course in these people; that its duration varies from months to years, having exacerbations with partial remissions; and that it frequently presents a picture similar to that of undulant brucellosis, or of the recurrent type of Q Fever. The fact that infectious mononucleosis assumes a chronic form is not generally known and is disputed by some, the recurrent episodes being labeled as reinfections by them; by others it is misdiagnosed or labeled "fever of unknown origin."

Isaacs noted that the heterophil reaction in these chronic cases rarely exceeded 1:64; that they often had a false positive Kahn test; and that this false positive might last either a short time or as long as six years. In the 206 cases he originally reported, among other erroneous diagnoses attributed to them, he noted the following: lymphosarcoma, leukemia, Hodgkin's Disease, brucellosis, Addison's Disease, neurasthenia, psychoneurosis, hypothyroidism, bacterial endocarditis, and many others.

He pointed out very clearly that these cases represented a chronic relapsing type of infectious mononucleosis; were not recurrent attacks or reinfections as erroneously believed; and were almost invariably misdiagnosed. A short resume of his work will be found in the George R. Minot Symposium on Hematology.

Finally, in the historical discussion, we must allude to the fact that no one has been able to reproduce this disease in man, experimentally; that its specific etiological factor remains unknown; and that in the present state of our ignorance, various types and manifestations of infectious mononucleosis, as these are presently understood, may ultimately turn out to represent more than one etiological entity.

Definition. Infectious mononucleosis, a term formerly synonymous with glandular fever, as we know it today is an infectious disease of unknown origin and of low virulence; it occurs most commonly as single, isolated, sporadic cases in families; but at times it assumes epidemic proportions, usually in institutions. Its symptomatology and course are exceedingly variable and inconstant, usually presenting cervical lymphadenopathy, fever, characteristic changes

in the lymphocytes without anemia, and frequently accompanied by splenomegaly. The types commonly seen are: the glandular, the anginose, the systemic or typhoidal febrile, the hepatomegalic with jaundice, and the central nervous system types, either involving the meninges or occurring as encephalitis. As in abortive poliomyelitis, so in infectious mononucleosis, there exists a latent or subclinical type which shows little or no clinical evidence of disease, yet when tested serologically during epidemics, presents strong evidence of having the disease, as shown by the presence of a positive Davidsohn heterophil test, as well as Downey cells in the peripheral blood.

Incubation Period. While unknown, seems to vary from four to 14 days or longer.

Signs and Symptoms. The signs and symptoms of this very protean disease vary tremendously at onset. It may be ushered in with a sudden chill followed by a series of chills, fever, prostration, and a paucity of physical findings. In contrast, it may present itself as a slow, insidious, low-grade fever with a mild catarrhal rhinitis, morning sore throat of minor degree, gastrointestinal upset, mild night sweats accompanied by insomnia, and a period of a week or two of weight loss and excessive fatigability. There are those in whom swollen glands are the only complaint. Again, the disease begins like an acute upper respiratory infection, with headache, malaise and sore throat.

Glandular Type. Lymph glands enlarge early, particularly those along the steno-cleidomastoid, and their swollen appearance at the angle of the jaw has been mistaken for mumps. The glands may be moderately tender or painful to pressure. To a lesser degree, the inguinal and axillary glands enlarge and become tender. The spleen and liver enlarge, though the latter is not unusually palpable, and in 20 per cent of the cases or more the spleen may remain grossly undetectable by palpation. However, if accurately percussed, the spleen usually will be found at the ninth interspace in the mid-axillary line instead of the sixth, where it normally belongs. In the severer cases, x-ray studies may detect enlarged glands along the trachea and in the mediastinum, and pressure from them may cause a troublesome cough. Also the disease, in any of its types, may develop an atypical pneumonia. In

severer cases, pain develops in the abdomen as the result of enlargement of the mesenteric glands, and at times, these are palpable.

Anginose Type. Frequently this starts abruptly as an acute sore throat with a true membrane, indistinguishable visually from that of diphtheria, of Vincent's angina, of streptococcal sore throat, or of confluent tonsillitis. On the other hand, it may be ushered in by one or two weeks of prodromal malaise for which no apparent cause is found until the throat symptoms develop. In all cases the diagnosis requires laboratory substantiation. It so closely resembles diphtheria, that despite repeated negative cultures, on more than one occasion large doses of diphtheria antitoxin have been administered to patients with this type of disease. Blood platelets may be affected, and in some cases virtually disappear. In the anginose type, this may be accompanied by peritonsillar swelling and sloughing ulcerations. With this lack of platelets in the blood, severe hemorrhage may accompany the sloughing, and the bleeding may be almost impossible to stop. It usually occurs at the inferior pole of the tonsil and may continue to bleed around the applied hemostatic sutures or forceps. Fever may reach 105° F. in severe anginose cases, falling by crisis; in other cases by lysis, requiring several weeks to return to normal if untreated.

Typhoidal or systemic febrile type. At times this type is exceedingly difficult to differentiate from other infectious fevers in which the spleen enlarges. It requires laboratory differentiation in all cases. It particularly simulates typhoid fever, brucellosis, murine typhus, and occasionally Q Fever, in all of which the spleen may enlarge.

However, in about one fifth of all the cases of infectious mononucleosis seen, the spleen remained impalpable. A word of caution is necessary in this connection: the spleen is extremely friable in this disease and the attempt to palpate its margin through the abdominal wall has frequently led to splenic rupture with hemorrhage, and in some instances, death.

The liver has been involved in every case of infectious mononucleosis that we have ever tested, regardless of the type of the disease, all tests showing impaired function. A damaged liver must, therefore, be considered a part of each and every case of infectious mononucleosis, regard-

less of type, varying only in severity and degree in a particular case.

Heptomegalic Type. As the name implies, liver involvement plays the predominant role in this type. In its early course, its symptomatology is identical with that of infectious jaundice or homologous serum hepatitis, the patient developing an enlarged spleen and liver, followed by jaundice and accompanied by the signs usually seen in febrile illnesses. None of these three types of hepatitis can be differentiated one from the other except by a careful history, consideration of the course and incubation period of the disease, and more particularly, by the specific laboratory tests for infectious mononucleosis. It is unfortunate that clinically, infectious mononucleosis in all its phases is so little known; that it is considered such a mild disease; and that it is so ignored in differential diagnosis by the average practitioner of medicine, be he specialist or generalist; and in particular, that more attention is not paid to the differentiation of infectious mononucleosis from the other two hepatitis entities, which usually may not be differentiated one from the other except by inference and suspicion.

It has been stated upon entirely untenable grounds that the so-called Downey cells, the atypical lymphocytes of infectious mononucleosis, are not specific for that disease inasmuch as they also occur in infectious hepatitis. This is putting the cart before the horse: when these cells are seen in any type of infectious jaundice, the diagnosis is infectious mononucleosis, none other, and the differential diagnosis is established. The rising titer of the heterophil usually clinches this, especially after the 11th day of the disease, but this test is negative in a fifth of the cases on one examination. If examined serially over several weeks, the number of positive heterophils increases proportionately, but it still remains absent in a number of cases.

Central Nervous System Types. In the last few years a number of cases with neurological manifestations has been reported. A personal communication from Dr. Martin Seifert, of the Evanston Communicable Disease Hospital, is to the effect that in his hospital this disease now constitutes one of the commonest and most puzzling differential problems from acute poliomyelitis. We have had the same difficulty in

distinguishing between these two diseases at times, especially early in their course.

The central nervous system symptoms of infectious mononucleosis to a marked degree, may also resemble those of infectious encephalitis of the type that follows other febrile entities. Meningeal signs and symptoms may be the first ones noticed, and the case may appear to be early meningitis; again, a particular case may run the usual course of one of the various types of infectious mononucleosis, and then have the signs of meningitis, or of encephalitis, develop after the previous symptoms have nearly or completely subsided. Again, the disease appears first as a benign aseptic or lymphocytic meningitis and disappears entirely, later to be followed by distinguishable features of infectious mononucleosis. In this last type, the blood count usually shows a polymorphonuclear leukocytosis, while at the same time the cells in the spinal fluid are lymphocytes. Downey cells occur consistently in the spinal fluid, but I have never had a positive heterophil reported from spinal fluid.

Paresis and other cerebral signs occurring during infectious mononucleosis disappear without residual effects as a rule, but some times a typical infectious neuronitis (Guillain-Barré) syndrome appears, and death has resulted in a few cases. In all such cases, the onset was with exceptionally severe headaches, and respiratory insufficiency was reported to be the cause of death.

Recently we saved such a case by tracheotomy and placement in a Drinker respirator. Such cases are being reported in increasing numbers, and in October 1956, Eugene Frenkel and his co-workers reported a dramatic recovery in an anginous case complicated by meningo-encephalitis of 26 days' duration, occurring within 24 hours after they instituted vigorous cortisone therapy.

Lesions of the Skin and Mucous Membranes. Rarely, an enanthem occurs in infectious mononucleosis, consisting of a small number of pin-head-size macules varying in number from a few to a couple of dozen that change from bright red to a darker color in 36 to 48 hours, and which usually disappear within four days. Various exanthems have been described, from those which resemble the rose spots of typhoid fever, to a maculopapular fine dry rash indis-

tinguishable from German measles, which is usually seen in cases with moderately high or long-continued fever. In addition, petechiae have been described from time to time, occurring at the tips of the fingers and at the mucocutaneous junction of the lips. Rose spots are apt to be most confusing because they appear at the end of a week, which is about the time the rose spots of typhoid fever first make their appearance. In addition, purpura hemorrhagica and lesser purpuric lesions of the skin have been seen from time to time, and just to confuse the dermatological picture more, typical urticarial eruptions have also been described. The protean manifestations of these eruptions might tend to lend minor strength to the concept of the pathogenesis of infectious mononucleosis as being due to an allergic hypersensitivity, rather than to the prevailing totally unproved concept that a virus ultimately will be incriminated as the cause of this disease.

Hematological and Pathological Aspects. The blood picture in infectious mononucleosis is quite characteristic. At present, it is not believed to be absolutely specific, but most of the doubt as to its specificity has been due to the belief that infectious hepatitis also shows Downey cells in the stained blood smear. More and more, less credibility is given to this particular reason for doubt, as the preponderance of evidence is that such cases are not infectious hepatitis, but actually are cases of infectious mononucleosis of the hepatic type.

Non-specificity is further attributed to Downey cells because of the alleged fact that they occur in a few other diseases, especially typhoid fever, Q fever, and a few others. I am inclined to agree with Kracke in his statement that "The atypical lymphocyte is specific for infectious mononucleosis and should act as a definite diagnostic criterion for the disease." The presence of typical Downey cells in the peripheral blood of a sick patient means that the cause of the patient's illness is infectious mononucleosis.

As to other conditions in which Downey cells are said to occur (with increased monocytes and atypical lymphocytes), more doubt is cast daily upon their so-called non-specificity.

Downey cells reported present in what appeared to be other illnesses, have, upon closer inspection, turned out to be plasma or other

abnormal types of cells: in other instances, hematologists have failed to find abnormal cells of any type in cases where they were supposed to have been present, or at least no cells that met the criteria for Downey cells as seen in infectious mononucleosis. William Ayres points out that the nucleoli of the atypical lymphocytes of infectious mononucleosis remain practically unmentioned in the literature. Using special stains containing Azure C, he demonstrated that these nucleoli, unlike those seen in other diseases, are large, numerous, and irregular in shape.

The most striking feature in infectious mononucleosis is found in the appearance of these Downey cells in the stained blood smear. Indeed, the diagnosis is established beyond a reasonable doubt by finding them present in a patient's blood. With rare exceptions, and usually due to other factors, among which are rare severe cases of infectious mononucleosis of long duration, anemia is not part of the picture in this disease, and the hemoglobin and erythrocytes are not substantially altered. This is important to remember, for we have seen cases misdiagnosed leukemia after a lymph gland biopsy, and then treated with X-ray therapy, where a single careful blood study was sufficient to establish the correct diagnosis of infectious mononucleosis. Indeed, one death has been reported as a result of this type of erroneous diagnosis and therapy.

The total white blood count is neither typical nor consistent. Aside from the Downey cell, the characteristic thing is a change in the morphology of the blood from day to day. Commonest is a leukopenia early in the disease, followed by a leukocytosis with a relative or absolute lymphocytosis, and the appearance of abnormal monocytes and lymphocytes by the end of the first week, or soon thereafter. This leukocytosis tends to subside to normal in the third week. The leukocyte count usually is the highest, with the greatest predominance of normal and abnormal lymphocytes, at the time the fever is the highest, and counts of 30,000 to 50,000 are not unknown. The striking feature of the blood picture is the differential white count, with its constant typical shifting toward abnormal Downey cells and lymphocytes, at the expense of the neutrophils. These atypical Downey cells show the typical foamy cellular structure with the bubbly vacuolization so characteristic in this disease.

Even experienced hematologists have been known to report plasma cells as Downey cells and vice versa. It takes continuous and repeated observation and experience day after day to become expert in their differentiation, but in typical cases, interns soon learn to distinguish them easily. The same remarks apply to the diagnosis of the disease; but when Downey cells are typical; when the course is consistent with the diagnosis; and when the heterophil becomes positive and increases in titer when run serially; the diagnosis is assured. Incidentally, this disease, once considered limited to children and relatively rare, is not true to either concept: it is exceedingly common and is diagnosed more and more often in adults.

Some of the pathological conditions noted in the disease will be mentioned briefly. Gross changes are almost exclusively confined to lymphoid structures, and particularly the spleen. Hyperplasia of the nasopharyngeal lymphoid structures is consistent. Enlargement of the liver is also consistent. The lymph nodes show a diffuse lymphoid hyperplasia of the larger and medium type cells with a merging of the stroma and loss of follicular structure. Fibrosis and reticular hyperplasia are present. The lymph nodes appear to be the seat of the disease, and in them, the spleen and the liver, the most marked changes are seen. Perivascular round cell cuffing occurs in virtually all the tissues of the body. The granulocytic components of the marrow are either normal or increased, and the erythropoietic function appears to be unchanged, which explains the absence of anemia in most cases of this disease. Myocarditis occurs, with the usual perivascular cuffing noted. A marked destruction of the scaffolding structures in the spleen and liver, similar to that noted in the lymph glands, is consistently observed.

Differential Diagnosis. It is our daily lot in the communicable disease section of the Los Angeles County General Hospital to have to consider this disease in the differential diagnosis of every disease that enters our admitting ward. It exactly simulates the various anatomical types of diphtheria, nasal, tonsillo-pharyngeal, and laryngeal. It is easily mistaken for Vincent's Angina: follicular and confluent tonsillitis is often simulated by the early and milder cases. Severe cases may be mistaken for agranulocytic angina. It has been variously misdiagnosed as

meningitis, encephalitis, encephalomyelitis of the Guillain-Barré type, measles, German measles, scarlet fever; for poliomyelitis repeatedly; for lymphosarcoma, Hodgkin's disease and acute or chronic lymphatic leukemia; for rheumatic fever and subacute bacterial endocarditis; for typhoid fever or dysentery; for undulant fever and a whole host of others, including regional ileitis, appendicitis, tularemia, septicemia, influenza, miliary tuberculosis, and the throat lesions of secondary syphilis. I could easily get others from my files. The diagnosis of lues is particularly dangerous when in error, for infectious mononucleosis often produces a falsely positive Kahn and Wasserman, requiring the treponemal immobilizing antibody (TPI) test to rule out syphilis, even though Downey cells are present. There is no disease in the infectious disease field that infectious mononucleosis does not exactly simulate at times and, as we have pointed out, these misdiagnoses may have very serious consequences for the poor patient.

Prognosis. The vast majority of cases, like those of abortive poliomyelitis, are never seen by a physician. They have their mild illness with its sore throat and quickly recover. On the other hand, even among the mild cases, prolonged periods of weakness and prostration, following apparent recovery, are common and discouraging to many patients, and their symptoms remain consistently undiagnosed as to etiology. About the only causes of death, in the few who have died of this disease, have been spontaneous rupture of the spleen, incident to its palpation during physical examination, and lesions of the brain or central nervous system. Among the rare complications are suppurative adenitis, endocarditis, respiratory insufficiency, and prolonged icterus with fever.

Transmission of Infectious Mononucleosis. No unquestioned experimental transmission of this disease from man to man, from man to animal, or from animal to man, has ever been recorded. While articles have been written purporting to show that material obtained from individuals sick with infectious mononucleosis, and subsequently inoculated into animals, has produced a disease capable of serial transmission to other animals, it has not been proved to the satisfaction of the majority of scientists working in the field, that the disease in question was infectious mononucleosis. Possibly this failure may be due

to species-specificity of the disease for man; because the experimental approach was faulty; or most probably, because so far, the material investigated has had to be taken at an unpropitious moment, viz., too late in the disease. At this point I should like to point out that only four years have elapsed since the virus of poliomyelitis was first isolated from the blood, although for 40 years or more investigators postulated that it had to be present and sought unsuccessfully to recover it from there. The reason it was not found was because it usually disappears entirely from the blood before the first symptoms appear. An analagous situation may obtain in infectious mononucleosis.

In a recent summary, Hoagland points out that infectious mononucleosis practically never appears in roommates or as a cross-infection in open hospital wards. He presents credible evidence that the disease may be carried from person to person in infected saliva, and spread by kissing. He states that this mode of transmission would account for the age groups of children and adults in whom the disease most consistently occurs.

Treatment. Most cases are too mild to require a doctor, their disease is self-limited, and in a day or two they recover. Probably the majority of cases are of this type. In severer cases, and the glandular and anginose are far from the commonest, treatment in the past usually has been supportive and symptomatic. Regardless of type, there was nothing else known to do.

When the anti-infective drugs became available, the sulfonamides and antibiotics, they were given assiduously. Today there is ample proof, well documented in the literature, that these drugs are entirely worthless in the treatment of infectious mononucleosis.

More recently, successful treatment of the disease with ketosteroids, particularly cortisone, has been reported enthusiastically in the literature. Before cortisone was available, Isaacs reported cortical adrenal extracts were the only beneficial therapeutic agents in his chronic cases. Cortisone, and ketosteroid therapy in general, are certain to be rapidly evaluated now, and to assume a place in treatment of these cases, particularly the most toxic acute cases, and in the long-continued chronic undulant types.

Human, pooled, convalescent, infectious mono-

nucleosis serum, as well as human, pooled, convalescent, scarlet fever serum have been noted by different investigators to effect very rapid beneficent changes in infectious mononucleosis patients to whom they were given in sufficient amounts. Immunotransfusion appeared to effect the same result.

Starting in 1940, we treated the severer cases of this disease that entered our hospital with human, pooled, convalescent scarlet fever serum. The result was excellent. These patients developed a sense of euphoria within 24 hours, and in the majority the disease appeared to be completely arrested within 72 hours. In 1948, scarlet fever serum became difficult to obtain. Scarlet fever, itself, virtually disappeared from the wards of the hospital because of anti-infective therapy with the sulfonamides or antibiotics administered in the home by physicians. It seemed wise, therefore, to see what might be accomplished in the treatment of this disease with suitable doses of gamma globulin.

Starting in 1948, gamma globulin was given to virtually every case of infectious mononucleosis that was admitted to our hospital. In more than 200 cases so treated, the result was excellent in every case with two exceptions: one of these was tracheotomized in a respirator with the complication of infectious neuronitis (Guillain-Barré); the other was a complicating meningoencephalitis. In neither case did the antibody content or therapeutic substance contained in the gamma globulin appear to be able to pass the choroid barrier in the spinal fluid, and neither patient was benefited. In four additional infectious encephalomyelitis or encephalomeningitic patients, however, the same good result was obtained that we obtained in all the cases of other types. No case of frank icterus of the type usually confused with infectious hepatitis was seen or treated in this method; I presume because these cases were misdiagnosed as infectious hepatitis and sent to other wards of the hospital.

The average dose of gamma globulin was 10 cc. given intramuscularly. In some cases, not benefited in 24 hours, an additional 10 cc. were given. In other cases 20 cc. intramuscularly were given initially because of more severe symptoms in the case in question. The largest dose given was 200 cc., given intramuscularly to an im-

portant movie star who had the ulceroglandular anginose type, the entire pharynx presenting a sloughing appearance, with a dirty greyish membrane visible and smellable. This young lady was critically ill and her absence from the lot was costing the motion picture studio over \$25,000 per day. They had five days of "shooting" remaining and unless she were quickly rehabilitated, the cast would scatter, never to be reassembled, resulting in a huge financial loss to the studio due to inability to complete the picture. To return the star to the lot at the earliest possible moment was imperative. Furthermore, her wedding was set for two weeks away.

Seven days from the day the gamma globulin was given, she was back on the lot, and subsequently her marriage was performed according to plan.

Usually after these patients receive their gamma globulin, they have a feeling of euphoria within 24 hours, and objectively, from the standpoint of changes in the temperature, pulse and respiration, the majority of them recover from acute manifestations of the disease within 72 hours.

In the average case of infectious mononucleosis, in which the dose of gamma globulin is adequately assessed as to size, it acts as specifically as antitoxin does in diphtheria, and if too small a dose is given, there is no harm in repeating it. However, the high cost of gamma globulin is apt to put it out of reach of many patients that need it most.

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ABSTRACTO
RECONSTRUCCION PLASTICA DE LA EXTROFIA DE LA
VEJIGA URINARIA COMBINADA CON OSTEOTOMIA
BILATERAL DE LOS ILIACOS

Por el

Dr. W. G. Shultz

Tucson, Arizona

LA OSTEOTOMIA bilateral de los iliacos permite una buena aproximación de los huesos púbicos siendo este el factor que permite reconstruir un esfínter ureteral sin tener que separar los músculos del pubis. Además hace posible una muy facil aproximación de los músculos abdominales sin tener que hacer desplazamiento de las fascias, resultando, entonces, una pared abdominal bastante fuerte.

Es mi parecer que es ésta la primera vez que la combinación de dichos procedimientos se ha usado con el objeto de resolver este problema.

La osteotomía bilateral de los iliacos se efectuó inicialmente. Dos semanas después la reconstrucción plástica de la extrofia de la vejiga se llevó a cabo, y, en esta ocasión, el ortopedista disecó los huesos púbicos, colocando dos suturas fuertes sobre cada uno de ellos, después de lo cual fueron aproximados tanto como fué posible anudando las ligaduras.

El ortopedista no intervino en la operación con dicho propósito, hasta después que la vejiga

hubo sido completamente construída y la construcción del esfínter ureteral iniciada aproximando los músculos esfinterianos y suturando justamente debajo de su inserción en el pubis. La pared abdominal fué cerrada sin des plazamiento de las fascias. La aproximación de los musculos fué facil y solo hubo un exceso de piel en el extremo superior de la incisión.

Férulas ureterales, inicialmente de cuatro puntadas de alambre de vitalio, cambiadas después de 10 días a cuatro puntadas fuertes de seda, reemplazadas por una sonda de Foley #10 en el 35avo día post-operatorio y quitada una semana más tarde, haciendo un total de seis semanas de la aplicación de la férula.

La combinación de estos dos procedimientos resultó ser un excelente método en la corrección de los trastornos sufridos por el paciente al andar, lo mismo que hubo muy buen resultado en lo que a funcionamiento de la vejiga concierne. La paciente no sufre incontinencia. Su vejiga tiene una capacidad de 7 onzas, y sus riñones son normales en los pielogramas intravenosos, lo mismo que tiene buen control urinario.

Trabajo, presentado en la Convencion de la Sociedad Medica de E.E.U.U. y Mexico en Mazatlan, Sinaloa Mayo, 1957.

PLASTIC REPAIR OF EXTROPHY OF THE URINARY BLADDER COMBINED WITH BILATERAL OSTEOTOMY OF THE IL'IA

(Abstract)

By Dr. W. G. Shultz

Tucson, Arizona

THE bilateral osteotomy of the il'ia makes possible close approximation of the pubic bones, and this is the factor which makes it possible to construct a urethral sphincter without separation of the muscles from the pubic bones, therefore avoiding damage to either nerve or blood supply of the urethral muscles. It likewise makes it possible to very easily approximate the abdominal muscles without fascial sliding procedures and results therefore in a strong abdominal wall.

I believe this to be the first time that this combination of procedures has ever been used in the approach to this problem.

The bilateral ilial osteotomy was first performed. Two weeks later the plastic repair of the bladder extrophy was performed and at this time, the orthopedic surgeon dissected out the pubic bones and placed two coarse silk sutures under each, after which the pubic bones were as closely approximated as possible with pressure and the ligatures tied.

The orthopedic surgeon did not enter the

operation for this purpose until after the bladder had been completely constructed and construction of the urethral sphincter had been started. After the above procedure, I completed the construction of the urethral sphincter by suturing the sphincter muscles together just below their attachment to the pubic bones. The abdominal wall was then quite readily closed without fascial sliding procedures. In fact, the muscles came together quite readily and there actually was an excess of skin at the upper end of the incision.

Urethral splints of first, 4 strands of Vitalium wire, changed after 10 days to 4 strands of coarse silk, which was replaced with a #10 Foley catheter on the 35th postoperative day and removed a week later add up to a total of six weeks of urethral splinting.

The combination of these two procedures resulted in excellent correction of this patient's walking as well as a good functional end result insofar as the bladder is concerned. The patient does not have enuresis. She has a bladder capacity of seven ounces and normal kidneys on I.V. pyclograms. She has good urinary control.

Presented before the Medical Society of the United States & Mexico, May 1957.

The President's Page



IN MY INAUGURAL ADDRESS I SPOKE OF THE DESIRABILITY OF A FEE SCHEDULE. AFTER THINKING OVER THE MATTER I DOUBT IF WE COULD EVER AGREE ON A STATEWIDE FEE SCHEDULE.

HOWEVER, I AM SURE THAT EACH COUNTY SOCIETY COULD AGREE ON A FEE SCHEDULE. THUS, MARICOPA AND PIMA COUNTIES FEE SCHEDULES MIGHT BE EXACTLY THE SAME WHILE PINAL, COCONINO, AND YAVAPAI COUNTY SCHEDULES MIGHT BE THE SAME, OR LESS, DEPENDING ON THE WISHES OF THE VARIOUS COMPONENT SOCIETIES.

THE BASE ON WHICH WE COULD ALL AGREE MIGHT BE THE CALIFORNIA RELATIVE VALUE SCHEDULE. THEN EACH SOCIETY COULD DESIGNATE THE DOLLAR VALUE OF EACH UNIT. FOR EXAMPLE, THIS MIGHT BE \$4 FOR AN OFFICE PROCEDURE, \$5 FOR HOSPITAL PROCEDURES, \$4 OR \$5.15 FOR RADIOLOGY AND PATHOLOGY, ETC.

THE WESTERN ORTHOPEDIC SOCIETY HAS A PUBLISHED FEE SCHEDULE FOR ALL THEIR PROCEDURES WHICH LISTS *MINIMUM*, *AVERAGE*, AND *MAXIMUM* FOR EACH PROCEDURE. I BELIEVE THAT THIS IS AN EXCELLENT WAY OF HANDLING THIS SITUATION. THEN EACH DOCTOR HAS A METHOD OF VARYING HIS FEES TO THE ABILITY TO PAY OF THE PATIENT.

I URGE EACH COUNTY SOCIETY TO ACTIVELY PROCEED TO STUDY THIS PROBLEM.

C. C. CRAIG, M.D.

PRESIDENT, ARIZONA MEDICAL ASSOCIATION

Editorial Page

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

8. Illustrations—Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.

9. Reprints—Reprints must be paid for by the author at established standard rates.

The Editor is always ready, willing, and happy to help in any way possible.

DRINK NO LONGER WATER, BUT USE A LITTLE WINE—

EVER since Bernard DeVoto(1) shook up the civilized world with his panegyric upon America's great contribution to the betterment of man's lot, the martini cocktail has become too common as a subject of conversation and, alas, experimentation. What was once simple martiniphilia has grown horridly into martinimania. Not only has the ratio of vermouth to gin plummeted to the infinite abyss but the new technique of quick and terrible "deep freeze" has added the menace of unpredictability. The visible melting of a lump of ice used to offer a measure of security. Don't count on it anymore; that supposed chunk of ice is actually only the solid phase of the stuff you're drinking. The gaseous phase comes later — tomorrow morning — in the cranial vault. No longer does your host say "Cheerio" or "Salud" — if he is a decent guy he intones the ancient mariner's warning "Sauve qui peut." If he doesn't he is patently subversive. Perhaps it is fitting that a Californian(2) summarizes the case for waterless martinis by saying, "It is not their strength, it's their inherent meanness."

From this sorry picture a reviewer turns to the recent contribution to medical literature of John Staige Davis, M.D.(3) with mellow delight, particularly if he shares the author's preferences "for a light, blended whiskey because of its low congeneric content". If there is anything distasteful to a person seeking the medicinal benefits of beverage alcohol it's those congeners; not only distasteful — they may be positively dangerous. Who knows what the butyric and caproic series of aldehydes can do besides stink — and when you get even more carbon atoms linked in a chain — heaven only knows!

Dr. Davis makes an undeniable case for the therapeutic virtues of beverage alcohol. There will be those, including this reviewer, who recoil at the implied approval of alcohol as a dietary adjunct in cases of liver disease but maybe the author is essentially right because he is realistic. Anyway, Dr. Davis's carefully and extensively documented paper makes precious reading and is particularly recommended to members of our profession who, contrary to the

Code of Ethics of our Trade Union, continue to exploit their religious prejudices in the care of patients.

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C.L.R.

WORLD MEDICAL ASSOCIATION

ELSEWHERE in this issue, considerable material with reference to the aims, desires and hopes of the World Medical Association are outlined. Thorough consideration of the policies listed should be given by our members and support forthcoming to this relatively new organization.

ASIATIC FLU!

ARE YOU ready with plans for care of patients if this expected epidemic arrives, especially if it becomes more virulent? What about essential services: — FIRE, POLICE, PUBLIC UTILITIES, HOSPITAL PERSONNEL, HOME NURSING, ETC.?

Your state society stands ready to help through AMA and on a local level, but you, on a local level, must have plans ready to set in motion. The Red Cross has plans and stands ready and willing to help.

LET US BE AHEAD OF THE SITUATION RATHER THAN LAGGING BEHIND.

The vaccine situation will be critical until January or February of 1958. Four million cc's were said to have been available to civilians by mid September of 1957. The doctors should adopt rules of priority and publish them. The use of old A & B influenza vaccine by unscrupulous individuals is to be condemned. They are pure charlatans eager for a fast buck.

Let us educate our patients in the characteristics of the disease, especially, as yet, in the low mortality. Here is an opportunity to show the public that we can plan ahead and calm our already aroused patients.

Let us make the most of this opportunity for public service.

Carlos C. Craig, M.D., President
Arizona Medical Association.

AUTO SAFETY BELTS RECEIVE WIDE INDORSEMENT AT MEETING

WITH ONE exception, witnesses appearing before the Traffic Safety Subcommittee of the House Interstate and Foreign Commerce Committee testified they favor automobile safety belts. Indorsing the device were spokesmen for industry, Air Force, Public Health Service and American College of Surgeons.

The sole dissenter was Andrew J. White, director of a private motor vehicle research organization, who contends that a "massive plan of action" is needed to bring the entire structure of the car in line with recognized safety principles. He said: "If it is possible to select the type of accident you are going to be involved in, wear a seat belt; if not, do not wear one as it may be the cause of death or serious injury."

The industry representatives — from Ford, General Motors, Chrysler and American Motors — readily agreed the belts have obvious advantages, when properly designed, installed and worn. The Ford witness said the belts could reduce the fatalities by 50 per cent. However, none of the industry witnesses would agree with committee members that perhaps the belts should be made compulsory equipment. They said a public educational campaign was in order, but that it shouldn't be industry's role to lead the campaign. The committee is considering a bill that would require safety belts to meet certain standards set by the government.

Dr. R. Arnold Griswold, representing the College of Surgeons, indorsed the belts, "because it is best to make a compromise between maximum protection and optimum protection," in the light of slow public acceptance. He said the belt may make the most impressive record in the greater number of nonfatal injuries, where lesser force is apt to be involved.

Col. John Stapp of the Air Force's aeromedical laboratory, where research is being done on safety belts in ground vehicles, said auto accidents injure more AF personnel than any other type of accidents, and kill more than any accidents except airplane crashes. Col. Stapp personally advocated the belts, and believes they may become required equipment on AF autos and trucks.

INTRAVENOUS Compatible with common IV fluids. Stable for 24 hours in solution at room temperature. Average IV dose is 500 mg. given at 12 hour intervals. Vials of 100 mg., 250 mg., 500 mg.

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INTRAMUSCULAR Used to start a patient on his regimen immediately, or for patients unable to take oral medication. Convenient, easy-to-use, ideally suited for administration in office or patient's home. Supplied in single dose vials of 100 mg., (no refrigeration required).

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control, with minimal side effects, over a wide variety of infections - reasons why ACHROMYCIN is one of today's foremost antibiotics.

Topics of Current Medical Interest

HEALTH OFFICERS RECOMMEND INFLUENZA COMMISSION, PRIORITIES

STATE and Territorial Health Officers, meeting in Washington August 27-28 in a special session called by Surgeon General Burney, recommended, among other things, that U. S. Public Health Service set up a priority list for use of Asian influenza vaccine and that a national commission be appointed to deal with influenza problems.

All of the recommendations received the wholehearted endorsement of the AMA's special influenza committee, headed by Dr. Harold Lueth, which met with the larger group, then privately. Dr. Lueth's committee agreed to get out to state medical societies the information developed at the Washington meeting, and to suggest action programs. The AMA, already has a program under way to keep the profession informed.

Recommendations adopted by the State and Territorial Health Officers were divided into four general subjects, and include the following:

Research and Program Evaluation — That a national commission be appointed to "consider not only the urgent problems in connection with the current epidemic but also the long range problems associated with the behavior of the Asian and other strains of influenza virus in the population during the next decade. . ."

Vaccination Promotion — That vaccine be allocated to states under a voluntary system, that PHS recommend to civilian physicians that they give priority in vaccinations to (a) those whose services are necessary to maintain health of community, (b) those necessary to maintain other basic services and (c) persons with tuberculosis and others who constitute a special medical risk. It was recommended that children be vaccinated, using the following doses — Three months to five years, 0.1 cc intracutaneously or subcutaneously, repeated after an interval of

one to two weeks; five to 12 years, 0.5 cc subcutaneously, repeated after an interval of one to two weeks; 13 years of age and older, the dose for adults (1.0 cc subcutaneously in a single injection). . ." It was recommended that local committees decide what are the "basic services" for priority purposes, and also that the polio and influenza vaccination programs be continued as independent and parallel operations.

Community Planning — That the health officer must be primarily responsible for the campaign in his area, but must get the support of other groups; should estimate possible effect of epidemic and determine current or potential resources to meet problem; in cooperation with medical society outline plan for community; if there is an effectively operating health council, this should be utilized, otherwise an ad hoc committee established; opening of schools and holding of public gatherings should not be delayed or curtailed as a preventive or control measure; maximum reliance should be placed on home care for uncomplicated cases.

Disease Reporting and Epidemic Surveillance — That specimens be gathered in the first three days of illness if there is an explosive outbreak of upper respiratory conditions; in identification of outbreak, throat washings and paired sera should be submitted from at least 12 cases. That several states gather intelligence rapidly on occurrence of pneumonia often a complication of influenza. Each state to submit weekly influenza situation reports to PHS. Information should include but not be limited to symptoms and etiology, complications and mortality and age groups involved. PHS requested to prepare glossary of terms in influenza program and assist state health department virus laboratories with diagnostic materials and services of PHS epidemiological personnel when requested.

LOCUM TENES

Locum tenes wanted, retired physician with Arizona license to take over general practice for Jan. 1958.

If Interested write:

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Settel¹ studied the effect of Rolicton in forty-seven patients and found no serious side effects. Assali, who observed the action of Rolicton in five patients with severe toxemia of pregnancy, states² that side actions are essentially non-existent. Side actions of such low incidence, together with its diuretic efficacy, suggest a high order of usefulness for Rolicton.

One tablet of Rolicton, b.i.d., is usually adequate to maintain patients free of edema after the first day's dosage of four tablets. Some patients respond well to one tablet daily. G. D. Searle & Co., Chicago 80, Illinois. Research in the Service of Medicine.

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2. Assali, N. S.: Personal communication, May 28, 1956.



Normal glomerulus, showing arteriole musculature, glomerular epithelial podocytes, and "epitheloid" muscle cells of vas efferens.

SEARLE

LIFE INSURANCE AS APPLIED TO THE PHYSICIAN

By John Bellows, C.L.H.

THERE is universal acceptance of life insurance as the foundation for financial planning among members of the medical profession. It is a safe statement to say that the professional man with his very complete educational background, recognizes the need and services of life insurance as much, if not more than, any other group. It is therefore a privilege to discuss some basic principles which particularly apply and are important to the physician.

We are often asked by business and professional people "How much life insurance should I own and what type should I buy?" The usual answer is that "It depends on your responsibilities, your income, your standard of living, etc." It is recognized that the financial problems faced by the medical and dental professions are in a special class. The dollar in your pocket is the same kind of dollar that is in the pocket of the merchant, the manufacturer, the farmer and the man who works for a salary — it weighs the same, bears the same markings and has identical purchasing power. However, the financial problems faced by the professional man and those faced by these others are quite different.

Your income producing values cannot exist apart from you. You cannot will these to your wife or children. According to the Secretary of the Indianapolis Medical Society it costs a young doctor about \$50,000 to hang out his shingle. Furthermore, that shingle on the average will be worth \$25,016 per year according to a recent survey. However, that income producing investment, which is specialized knowledge and skill, stops producing income the moment you stop working because most of your assets are in the head and the hands. Your office equipment, books, practice are of little value to you or your family when you can no longer use them in your profession. Thus, your capital investment is made worthless by death, incapacity, or old age. You have heard this many times, no doubt, and are fully aware of the problem.

Contrast this situation with that of the man who owns a successful wholesale or retail merchandising business. His capital consists of shelves stocked with merchandise worth thousands of dollars. He has men working for him

who can carry on in his absence so that his capital will continue to produce income for him if he is disabled or for his family if he dies. If the family or the individual wishes to sell the business, at death or retirement, the investment can usually be recovered at cost so that no loss is involved. But the very minute the professional man stops working, for whatever cause, his "invested capital" stops producing income.

It would be very strange for one physician to call in another and say to him "I want to sell my practice to you for \$100,000 and I'm sure it will be a bargain at that price. It has been paying me an annual income of \$20,000 and on a 10 per cent basis that means it is worth \$200,000. A piece of property producing \$20,000 yearly would be valued at \$400,000 on a 5 per cent basis and even at \$200,000 on a 10 per cent basis.

It is my belief that the basic value of life insurance has been and always will be the indemnification of the human asset. There is no other way for most of us to underwrite our future earnings and activity value than through life insurance. It is the only method known by which a modest outlay creates a substantial estate. This is important because it's not a question of "if you die" but "when you die."

If you are now age 35 and use the ever popular Ordinary Life policy, you can at once set up an estate of let's say \$50,000 for only \$1,320 a year or \$110 a month. Your family gets the \$50,000 even if you die one day after your plan is in force and no income tax to pay. This is equal to \$75,000 in earnings for many of you. We call this the "create and save plan" — a plan where you immediately create your estate, then save to keep it.

Contrast this with the "save and create plan" — if you take the same \$1,320 and get 2 per cent interest, *net after taxes*, and die at the end of the first year, your family would get only \$1,346. I think I can guess your reaction to 2 per cent net and the fixed dollar investment. All right, suppose we take the common stock yielding 7 per cent gross with a net of 4 per cent and an opportunity to hedge dollar depreciation, we still only have \$1,373 at the end of the first year — maybe. If you die at the end of five years (using the 2 per cent factor) your family would have only \$7,006. Suppose we go one step further and compare at the end of

20 years. The "save and create" plan would be worth \$32,713 to your family in case of death. The insured savings plan or the "create and save" plan would be worth \$50,000 plus dividends of \$14,950, or \$64,950 — almost double in estate value, and that's for 20 years.

A few people are lucky enough to inherit an estate but the rest of us must rent one or ask our families to gamble with us while we save one. Is not the "create and save" plan ideal for professional people? Because you spend years learning your skills and developing your practice, a long span of life is essential to get a fair return.

Have you ever taken the time to calculate your economic value — not what your bank account, bonds, car or home are worth but what you represent in actual "dollar value" as an income producing unit. Would you be willing to sell your future earnings to age 65 for the life insurance you own? Most doctors in their 30s will earn a half a million dollars give or take, during their years of practice and that's the life value we are talking about and must protect to the extent possible.

So far we have thought about dying too soon, but what about living too long? The current annuitant mortality table shows that the average male expectation of life at age 65 is 15.90 years, or a maximum of age 80 plus. No manufacturer with a plant worth \$100,000, \$200,000 or more would think of running his business without a "depreciation reserve." If he did he would some day find himself without funds to replace his machinery and buildings. He would be out of business — out of income. His accounting department would not let him operate one month without setting aside part of each dollar of income for depreciation.

This manufacturer has fire insurance to safeguard his plant against destruction by fire, while he builds up his depreciation reserves to replace his assets against premature destruction and adopts the principle of setting up a regular annual depreciation reserve, he cannot hope to achieve a fundamentally sound financial status. When a man accepts these basic facts, there is only one question left and that is "What kind of plan shall I use?"

Every sensible man wants his financial plan to be waterproof not only for himself but for his family. Therefore, it must meet at least three conditions:

1. It must supply an income sufficient to meet his and his family's future needs at an outlay he can afford to make today, and

2. It must free him of worry and care. No man who wishes to achieve professional success can spend hours and days worrying about financial planning, and

3. The plan must safeguard him against interruption by disability and his family against hardship if he dies too soon.

Certainly one answer to these requirements is life insurance — it guarantees *money for future delivery*.

So far it would appear that using life insurance to accomplish our objectives is the only way out but that conclusion is not intended. There are, of course, many ways of saving money and many types of property eligible for safe accumulation. There are also speculations which can be afforded by a few but unfortunately many who can't afford to lose are drawn into such risks in an effort to do it the easy, fast way.

The outstanding investment firm of Merrill, Lynch, Pierce, Fenner and Beane in one of its articles "What an Investment Firm Thinks of Life Insurance" has briefly this to say:

"Always get First Things First. Family Insurance comes first. Not just an insurance policy but an *insurance plan*, to provide for family protection, educational needs and retirement. Second, home ownership. And third, a cash reserve for emergencies."

Now that we have exposed the fact that life insurance is the foundation of a sound financial plan, our next question is "What type of life insurance?" Actually all policies are mathematically equal to each other. With the exception of term insurance, all policies provide savings if you live, or life insurance if you die. For a given deposit, you get a plan providing large savings and small life insurance or one that gives a large amount of life insurance and small savings — the savings benefit is always balanced against the death benefit. The buyer must balance his need and desire for immediate protection against his problem of retirement.

Most young professional men start out with some debts either for equipment, education, or in some cases an office building. Also, of course, their initial income is low and their family is young, yet they have a tremendous investment in themselves and a corresponding income po-

tential if all goes well. These men must be satisfied to start their life insurance program with only part of the package — the protection part. This refers to "term" insurance — covering death only — and is analogous to fire insurance. The word "term" indicates that it is temporary and does not protect for a very long period of years. With liabilities heavy and income low, the young doctor must start out by "renting" his life insurance because of the low outlay. He can, of course, compromise the issue by using one of the many combinations of permanent and term insurance. There again, the individual situation will govern.

The philosophy underlying the purchase of this kind of insurance is simply that a man knows that he won't retire much before 60 or 65 but that he does not know how many years he has left before he will die. As a result he will start out with a substantial amount of term insurance and then convert it over, without medical examination, to permanent plans as soon as possible, thus gaining both the protection and retirement advantage.

Our experience has indicated that professional men who are well established are deeply concerned about the retirement problem. Actually, all life insurance policies except "term" insurance carry a "built-in annuity clause." To make this point clear let me say it again this way. No matter what kind of permanent life insurance you purchase from any one of the leading companies, you can use it to provide yourself with a retirement income after it has served its protection purpose in capitalizing your future earning power. Every permanent kind of life insurance, even the mislabeled standby which is called Ordinary Life, can be converted to a life income for you or a joint life income for you and your family. No man plans to be poor at 65 — but too few make plans *not* to be.

Few people realize that the actual cost for a substantial insurance program is very little. With most plans of insurance, the interest earned on the savings part (income tax free) of the contract will cover the *cost of the protection*. One low cost company actually shows a larger cash value than net premiums paid in 20 years for even the low premium Ordinary Life policy, based on a projection of current dividends. With interest rates going up and mortality going down, such a projection is reasonably conservative. The above statement holds good for ages up to age

38. The higher premium types, of course, show substantial gains over premiums paid.

Now let's talk about taxes which have a way of creeping into daily conversations. Many people have never investigated the income tax advantage of life insurance as personal property. It is common knowledge, of course, that the principal proceeds of a life insurance policy are free of income tax when claimed by the beneficiary. However, suppose our widow elects some form of monthly income whether in a given amount or over a period of so many years, is there still an income tax advantage? There certainly is under Section I.L.C. Sec. 101(d) to the extent of an exclusion of \$1,000 each year of the amount otherwise determined to be taxable.

This a year is the income from \$33,333 invested at 3 per cent. Though most widows have only small income tax problems, the very reason they are small suggests the value of an income tax advantage.

Another tax advantage of life insurance is of great interest as one becomes successful and finds his tax bracket climbing from year to year. If a married man earns \$25,000 a year and takes the usual deductions, he finds himself around the 42 per cent bracket and he must consider this carefully when he makes investments that pay him immediate taxable income. Even a 4 per cent taxable yield shrinks to 2.3 per cent at the 42 per cent bracket.

The life insurance advantage is that the interest required to build up the cash value is not taxable annually. A man 35 years old can purchase types of life insurance policies which will yield a net average return to age 65 of 2½ per cent with complete safety, no management problem, no publicity, scientific diversification, and no annual income tax on the gain because it compounds automatically within the life insurance policy. After all, it's the net after tax that counts.

Now that we have covered the family protection and personal retirement aspects of a life insurance contract, let's look at the third element in a balanced financial program and one of particular importance to professional people. Reference is made to the "self completing" feature or "waiver of premium clause." In the event of a prolonged illness or disabling accident, under this clause the insurance company will pay your premium for you — the full face of

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your contract remains in force — your life insurance investment continues to increase in value — your savings continue to grow just as though you were paying the premium. Your most important asset is protected from loss at the critical time of lost earning power.

Most people learn by experience — their own or that of others. Our own experience, of course, makes the strongest impression. It has, however, one major drawback — after we learn we are wrong, it may be too late. Therefore, let us perform a financial autopsy on a group of typical physicians. The following data was the result of a study made by Charles Kingston and Associates with the complete cooperation of the Hartford (Connecticut) County Medical Association. Through the association, its obituary files from January 1, 1940 to May 1, 1953 were made available. In addition, the probate court files for Hartford County were reviewed which included 144 files. This study of 144 estates over a period of 13 years revealed the following:

ESTATES SUBJECT TO PROBATE

| Gross Value | Percentage |
|----------------------------|------------|
| Less than \$10,000 | 31.0% |
| \$10,001 to \$25,000 | 21.0% |
| 25,001 to 50,000 | 15.0% |
| 50,000 to 100,000 | 16.0% |
| 100,001 to 300,000 | 10.0% |
| 300,001 to 500,000 | 3.8% |
| 500,001 to 1,000,000 | 1.6% |
| Over \$1,000,000 | 1.6% |
| | 100.0% |

The above deals with those who had estates — some 13 per cent of the doctors who died in Hartford County during the period under study had no estates. They died in debt.

AVERAGE ESTATE SETTLEMENT COSTS

| | |
|---|-------|
| Bills payable | 2.6% |
| Funeral Expenses | 1.2% |
| Misc. Adm. Exp. | 1.3% |
| Other expenses (Lawyers, appraisers, etc.) | 1.3% |
| Executor's or Administrator's Fee | 2.4% |
| Widow's Allowance during settlement | 3.5% |
| | 12.3% |

— Thus of the estates —

| | |
|--------------------------------------|-------|
| One-third depreciated | 12.3% |
| Two-thirds depreciated | 16.1% |
| The larger estates depreciated | 32.9% |

EARNINGS AND PREMATURE DEATH

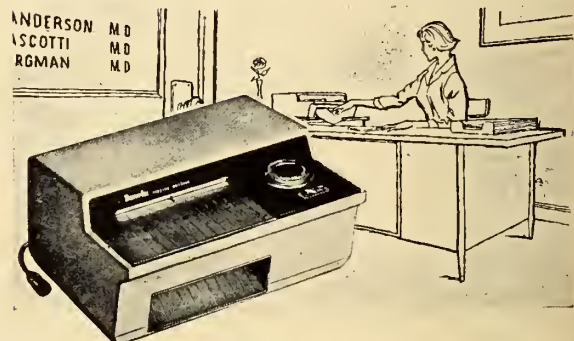
| Period | Standard Mortality Table* | Hartford County M.D.'s |
|-----------------|---------------------------------|------------------------------|
| Age 41-50 | 7.7% | 15.3% |
| Age 51-60 | 14.1% | 11.9% |
| Age 61-70 | 23.2% | 35.6% |
| Age 71-80 | 27.0% | 25.4% |
| Age 81-90 | 14.1% | 5.1% |

*This table used by virtually all life insurance companies.

At the peak of physical manhood (41-50) doctors seem to do much better in keeping their fellow citizens alive than they do for themselves. Or as an actuary might say, "During that decade the average citizen is twice as good a risk as a physician."

Finally I would like to say that I have yet to meet one who, nearing the end of the road and looking back, said that he owned too much life insurance — but I've talked to many who earnestly wished that they owned a lot more.

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Unsaturated fats tend to depress serum cholesterol levels in many patients, whereas saturated fats may have the opposite effect. Medical references on this subject, as well as other findings concerning unsaturated fatty acids in nutrition, may be found in the book, "Vegetable Oils in Nutrition."

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COMPARATIVE COMPOSITIONS OF FOOD FATS AND OILS
Fatty Acids as Percentage of Total Acids

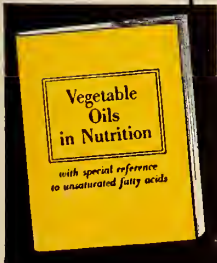
| Fat | Saturated | | Oleic | | Linoleic | | Linolenic | | Arachidonic Ave. | Iodine Value | |
|----------------|-----------|-------|-------|-------|----------|---------|-----------|---------|------------------|--------------|---------|
| | Ave. | Range | Ave. | Range | Ave. | Range | Ave. | Range | | Average | Range |
| Butter | — | 46-48 | — | — | 4.0 | — | 1.2 | — | 0.2 | — | 26-42 |
| Coconut oil | — | 75-88 | — | 5-8 | — | 1.0-2.5 | — | — | — | — | 7-10 |
| Corn oil | 13 | 11-15 | — | 23-40 | 56 | 46-66 | — | 0.0-0.6 | — | 126 | 113-131 |
| Cottanseed oil | 26 | 21-30 | 27 | 22-36 | 47 | 34-57 | — | — | — | 105 | 90-117 |
| Lard | 43 | — | 46 | — | 10 | 15.6 | 0.5 | — | 0.5 (2.1) | — | 53-77 |
| Linseed oil | — | 6-12 | — | 13-31 | — | 10-27 | — | 30-64 | — | — | 170-204 |
| Margarine | 23 | 15-23 | 62 | 59-77 | 5.8 | 5-11 | — | 0.1-0.9 | 0 | 81 | 74-85 |
| Olive oil | — | 8-16 | — | 53-86 | — | 4-20 | — | — | — | — | 80-88 |
| Peanut oil | 17 | 14-22 | 54 | 44-65 | 29 | 20-37 | — | — | — | 98 | 90-102 |
| Shortening | 25 | 17-45 | 62 | 43-79 | 5 | 3-12 | — | 0.2-0.6 | 0-0.5 | 78 | 59-80 |
| Soybeon oil | 15 | 11-18 | 25 | 18-58 | 55 | 28-62 | 5.1 | 0.3-10 | — | 130 | 100-143 |
| Tallow (beef) | 53 | — | 42 | — | 4 | 5.3 | 0.5 | — | 0.5 | — | 40-48 |

Iodine numbers are an accepted measure of the degree of unsaturation of vegetable oils.

TO PHYSICIANS interested in the study and management of high cholesterol blood levels, this most recent monograph will provide helpful information. It is free on request. Write to: Corn Products Refining Company, 17 Battery Place, New York 4, N. Y.



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HOW FIXED FEE SCHEDULES RESULT IN GOVERNMENT CONTROLLED MEDICINE

By James L. Doenges, M.D.

IT IS INDEED a pleasure to be with you to discuss briefly one phase of the socio-economic aspect of the practice of medicine and surgery.

In recent years considerable adverse comment has been leveled against physicians in general and especially against surgeons in the area of fees. This attack has been stimulated by a few who are utilizing every approach to discredit the practice of surgery in their attempt to stimulate public demand for government controlled and paid medical services.

The many approaches utilized by those who would destroy the free practice of medicine form an awesome, complex, but very complete picture. The problem of fees is only one, but a very important part of this subject.

Limitation of time requires that this discussion be brief and relatively general. We cannot go into detail on any part.

Much of our difficulty results from misunderstanding of accepted practices and facts as well as purposes. What can be said in regard to fixed fees for surgical services can be repeated with equal validity for every other professional service.

It is not our purpose to discuss the reason for the selection of the medical profession for criticism and destruction. However, it is interesting to consider why we were chosen instead of attorneys or some other professional group. Have you heard any serious proposals to fix fees for legal services? There are many reasons why the medical profession was chosen. Suffice to say, we, the members of the medical profession, have been chosen and we must face this fact.

To a large degree, criticism of our profession centers about fees. So much has been said against us that many of our own members have become apologists or downright cowards, fearful of stating their own true estimate of the value of their services, fearful of opposing the will of organized opposition and pressure groups, fearful of defending the basic rights of the citi-

zen, and even fearful of accepting their own responsibilities in this particular area.

These individuals have, in effect, surrendered to the opposition and have damaged the profession in so doing. It is an amazing and embarrassing sight to see members of our profession cringing before the onslaught of a few vociferous groups and planners. **I AM SICK AND TIRED OF MEDICAL APOLOGISTS.**

It seems these men have forgotten one fact, the most important single fact in this fight for the freedom of medicine. *Only doctors can deliver medical services.* I repeat, **ONLY DOCTORS CAN DELIVER MEDICAL SERVICES.** The AFL-CIO, Department of Health, Education and Welfare, the county, state or federal government, the United Mine Workers Association — none of these nor all of them combined, can perform one operation. **ONLY DOCTORS CAN DELIVER THESE SERVICES!**

In spite of this fact, we have moved a long way along the path of controlled practice. We can blame no one but ourselves. We have permitted it to happen.

At present we are faced with a very serious problem, that of fixed fees. Some, for lack of understanding or appreciation of the plan behind fixed fees, have approved. Others feel fixed fee schedules are a means of delaying the day of government medicine. Others like the idea because it is, to a certain degree, advantageous to them and assures an income — at present. Others simply lack the courage to oppose the plan.

What are fixed fee schedules? Let me state that I do not intend to imply that fixed fee schedules are the only road to government medicine. They are not, but they are an integral, in fact an indispensable, factor in all such programs.

Likewise, it should be understood that fixed fee schedules do not result inevitably in government medicine. It is not essential that they do. However, when accepted by large groups, they always imply and comprise acceptance of one of the essential features of all government medical programs.

Government medicine is no more inevitable as the result of the acceptance of fixed fee schedules than is total socialism an inevitable result of the acceptance by the people of a nation of the nationalization of one segment of

the economy. In both instances the worst is not inevitable, but history provides no important example of the exception.

There are many of us, in fact I believe almost every member of the profession, who desire to be free. Why, then, do we accept these controls? If we are to remain free, we must know the enemy and his plans.

The importance of fixed fee schedules is not well understood. In the first place, most of us practice under a modification of the fixed fee system for office calls as well as most surgical procedures. These fees have been arrived at, in most cases, without agreements, consultations, or even discussion with other practitioners. However, they constitute fees usually acceptable to both the patient and the physician. Note this point for it is the most important single feature of such agreements. Fees, although ordinarily approximately the same, are agreed upon by the physician and his individual patient.

Just what constitutes a "fixed fee schedule"? Such a schedule may be established by one physician or any number of physicians. In the final analysis, a fixed fee schedule is merely a catalog of procedures with a price stated for each. It is no more. It can be no more.

This is a relatively innocuous matter. It becomes obnoxious and dangerous the minute it becomes a point of bargaining, the minute the establishment of the schedule leaves the hand of the individual physician and his individual patient. The danger lies not in the schedule itself, but in the fact that a third party has entered the picture.

The third party may be another physician, an associate, or a group of physicians or hospital staff, a county society, state society, or a national society. It may be a political unit at local, county, state, or national level. It may be a non-political "pressure group," or any organization to which, though unilaterality of law a portion of the police power has been granted. The most vociferous and obvious example of the latter is the present day labor union.

Much has been said in recent years to indicate a disapproval of and repudiation of the importance of the individual patient-physician relationship. Some groups, especially pressure groups, have repeatedly publicized opinions which imply that the patient receives poor care if he is permitted to choose his own physician. They also indicate that the patient-physician

relationship is outmoded and that it is of no importance. They also attempt to eliminate the importance of the individual patient-physician relationship in the area of fees.

There are many of us who believe that the individual patient-physician relationship is all important. The importance of this relationship does not require detailed discussion here. Suffice to say, this intimate and individual relationship must exist in every area if the practice of medicine is to continue at the high moral and intellectual level which has characterized it through the years.

As soon as a third party enters the picture, regardless of the area, the destruction of the free practice of medicine is underway.

Attempts to interfere with the actual practice of medicine have been fewer and less noticeable although far too extensive and far too common, than in the area of fees. The reason for this is obvious.

Too many physicians have accepted third party interference with their practices. Control is control, and it matters not who exercises this control. The fact of control remains unchanged. A group of physicians can be just as unfair as a group of government officials. A group of physicians can be just as dictatorial as can a group of union officials.

Many physicians believe that anything they accept without some agency issuing a regulation or without a law, constitutes a "voluntary" act. The word "voluntary" is so badly abused that it has lost much of its meaning to many. Many accept programs they would not accept otherwise because the word "voluntary" is used. Many believe that if a group of physicians constitutes the third party the element of control is eliminated.

There are numerous areas in which fixed fee schedules (one example of control) are in operation. Schedules for care of veterans at the local level are accompanied by fixed fee schedules. These schedules are a perfect example of control. Regardless of how the schedules were determined, they are rigidly fixed, and so rigidly controlled that any participating physician is subject to considerable legal difficulty if his charges exceed the schedule.

Workmen's compensation laws establish fixed fees for services in many areas. There are many similar examples such as contract agreements between individual physicians or groups or phy-

sicians and private industries or insurance companies to render services for fixed fees.

It is important to note that in every area in which the government "pays" for medical service, the fee is fixed. Granted, this may be achieved through so-called negotiations with some medical group, but it does not eliminate the fact that the fee is fixed and is fixed by a third party, usually the governmental agency. This is true of welfare, township, vocational rehabilitation, and every other program of similar nature.

However, the area in which the idea of fixed fees has received greatest acceptance is, on a purely numerical basis, in the field of so-called "health" insurance.

Many physicians have accepted fixed fees in this area because they are over-awed by the idea that it is "voluntary" and they believe that the fees are determined by physicians on a "voluntary" basis. Note the all important fact that in such an agreement the negotiation of a fee always involves a third party. Even if it were another physician, it would still be a third party. It is not the individual physician rendering the service to the individual patient. Herein lies the seed of our destruction. Insurance programs cover more millions of people than do any of the other fixed fee programs. Efforts are being made to force all of these programs, especially the "mutuals," into service plans. Similar pressure is being exerted by some private insurance companies and being demanded by so-called "welfare" programs of unions and other groups. Recently an example of the importance of the fixed fee schedule in the establishment of government medicine became apparent in negotiations on the "Medicare" program. One point which every physician should observe with keenest apprehension is that this program was supplied by the government but paid through private or mutual insurance companies.

Let us observe a few of the legal features common to all of these so-called insurance programs. Many physicians do not realize that if their state society enters into an agreement with a division of the federal government, although this does not commit the individual physician to any act, it does establish a contract. Regardless of whether it is the Medicare program or the home town treatment program of the Veterans' Administration, the physician is regarded

as having entered into a contract with the government under the terms established by the state medical society or negotiating unit, as long as he accepts a patient under one of these programs. As soon as the physician files the papers for rendering services under any of these programs, he has, in effect, signed a contract with the government to deliver services under the terms of the general contract. In short, he has agreed to practice government medicine in this particular case. He is subject to considerable legal difficulty provided his fees exceed those established in the contract.

You are well acquainted with the fact that under the welfare programs of the various political units a charge in excess of that allowed by the agency cannot be collected legally. All of the so-called "welfare" programs, such as those of the United Mine Workers, require that physicians agree to accept the fees fixed by third parties for their services.

Even in the indemnity programs an enormous element of control is exerted over the physician. In many of these programs, the physician is required to state his fee, in spite of the fact that the companies have a stated allowance for stated services. This does not constitute a fixed fee, since there is no agreement on this matter. However, the patient has paid a premium calculated to allow the benefits scheduled for the procedure. In cases in which the physician does not care to make his charge as high as the allowance, an additional legal complication arises. Remember, the patient has paid a premium sufficient to entitle him to the listed benefits. If the physician's charge is lower, the patient does not receive the additional amount. If either the patient or physician indicates a higher fee to the insurance company he is liable to legal action for fraud. This indicated how control creeps into every facet of the economic area of the practice of medicine under any of these programs.

It is interesting to follow the methods by which so-called health insurance has been utilized to bring about the control of the medical profession and how it is being utilized to further the intrusion of government into the practice of medicine. The history of insurance of this type provides an example of this progression.

Originally, health insurance was written on the basis of a contract between the patient and

the insurance company. Such contracts did not involve the physician at all. The patient purchased a contract which provided certain amounts of money under stated circumstances. The patient reported the incident to the company and received that amount of his contract payment.

The difficulties encountered under these contracts caused many important changes. Large numbers of insurance companies sprang up. In Europe they were called "Friendly Societies." In the United States the position of the friendly society was occupied by the fraternal organizations and many small "mutual" companies. Here, as previously, the insurance contract existed between the patient and the insurance company. However, the groups or companies began requiring reporting or certification by the physician. This seemed a very innocuous matter, but here again, the third party entered the picture.

Many organizations found it more convenient to employ physicians, under contract, to render services to their members or subscribers at a fixed fee or on a "per capita" basis. Such contracts are offered by many groups today to almost any physician who will accept them.

Under the original concept of these programs the benefits were still paid to the patient and were not made payable to the physician. Some find it difficult to understand the importance of this particular move, but let us observe that at this point in the history of health insurance, **THE PHYSICIAN BEGAN ACCEPTING A THIRD PARTY** in the patient-physician relationship by reporting or certifying an illness of a patient to someone other than the patient himself. *This began the "voluntary" deterioration of and destruction of the confidential nature of the patient-physician relationship.*

It was only natural that such programs should be subjected to many abuses. One of these soon became obvious and distasteful to the contract physician. The patient received the benefits to which he was entitled but failed to pay his physician's fees. The physician felt he was entitled to his fees and held that the various companies had a responsibility to him because he had accepted the company as a third party in supplying it with information and therefore regarded the company as somewhat responsible for the "proper use" of the benefits which were obtained by the patient. At this point physicians began looking to the third party in one area of

responsibility. This argument was enhanced by acceptance of the idea that the patient purchased the insurance for the sole purpose of providing funds to meet medical difficulties. These facts, combined with many others, led to the acceptance of the idea of making the benefits assignable to the physician rendering the services, or of making the benefits payable to the physician and the patient jointly.

It is all important to note that all of these contracts are entered into by the patient with the company, and that the physician has absolutely no part of this agreement. The physician has no moral right to require that the benefits be paid to him. He did not pay the premium, he did not enter into the contract in any way, and from a moral point of view, he has no right to have his name on the check. The benefits properly belong to the patient, not to the doctor.

However, the most important part of this entire procedure centers about the unrealized fact that such procedures encourage the patient to begin to divorce himself from a sense of personal responsibility to his physician. This divorcement of the responsibility of the patient to discharge his financial obligations to his physician is one of the most important elements in the destruction of the patient-physician relationship. It encourages the patient to believe that someone else, in this case the insurance company, is responsible for his financial obligations. Having accepted the principle that someone else may rightly assume this responsibility, it becomes a matter of indifference to the patient — and eventually to the physician, who assumes this responsibility. The door is open for government intervention.

There may be those who will minimize the importance of the step but there are many of us who feel that the socialization of the nation and government control of the practice of medicine cannot exist if individual responsibility is realized and accepted in all areas.

As a result of the above, and as concrete evidence of the deterioration and destruction of the patient's sense of responsibility and of his desire to be relieved of all responsibility, we need only observe the growth of the idea that patients should be able to purchase insurance which would cover their obligations and responsibilities in full.

One hears practically nothing about complete coverage for loss to natural forces for personal

property. Total coverage in most areas is not available except at prohibitive rates and is even discouraged by agents and companies alike.

Factually, total coverage in any field is almost universally accepted as impractical, too expensive, unnecessary, and most unrealistic!

Why then the demand for total coverage in the field of "health"? The answer is provided by the writings and actions of those who would destroy all freedom. The fixed fee schedule is one of the most important parts of their plan to establish this type of government medicine and reduce all professional men to the level of salaried or hourly rated employees of one agency or another.

The field of medicine is utilized rather than any other field because of the enormous emotional appeal and the almost universal experience of need or desire in this area! In no other area can such an appeal be cultivated.

The idea of complete coverage is of greatest importance. In recent years, an ever increasing cry has been heard for complete medical services for all — for a fixed fee. Here again, the importance of the "fixed fee" is paramount.

One cannot help but wonder how it came to pass that in this one area — that of medical and surgical care and hospital expenses, a demand that *all* expenses should be covered for a single fee has become evident. A study of the history of the progress of socialism answers all questions on this subject.

It is not an accident that such unreasonable "demands" are presented. It is part of the plan to destroy all freedom, not just freedom in the practice of medicine — but the freedom of every segment of the economy.

The socialists have recognized this fact for many years, and have utilized it with telling results. Please remember that they now describe health as a "*right*." This thing called "health" is defined as — "The state of complete physical, mental and social well being and not just the absence of disease or infirmity." (WHO)

All of this is due to everyone as a right. All of this is something everyone has coming in equal quantity and quality. Does it not follow that something so universally "due" to all should be supplied to all either "free" or at least at a set fee?

The writings of the socialists describe the process in detail. Read them — and see how American medicine has followed their lead —

just as the sheep follow the "Judas" goat. The slaughter of medicine as a market economy phenomenon is just around the corner.

Under all of these plans, the mutual and personal responsibility of patient and physician is lost!

A natural consequence of this deterioration of the sense of responsibility and of the growing idea that someone else should be responsible, encouraged many, especially pressure groups, to contend that variation in fees produced insurmountable difficulties. It became a source of irritation to find that the fees allowed, when the patient visited one physician, completely relieved him of his responsibility, but when he visited another physician did not quite achieve this end. This added fuel to the fire and the idea of fixing fees or of establishing fee schedules came into greater prominence.

Such programs permitted insurance companies to calculate their loss on a more accurate basis. It also permitted groups and individuals to secure coverage which could be calculated in advance as being complete coverage. It becomes obvious that once such a fee schedule is accepted a logical consequence should be to require, by one means or another, that physicians agree to accept those schedules as payment in full for their services.

It should be emphasized that the amount of the fee is of no importance. At the point where the physician accepts such an agreement, he joins his patient in his flight from personal responsibility and accepts the idea that a third party is not only responsible for the payment of his patient's bills but that a third party is likewise entitled to establish his fees. Here again, this may seem a minor point to some. However, it is most destructive to the free practice of medicine. No physician can relinquish his personal responsibility in the area of fees to a third party and continue to practice medicine in the same moral climate he occupied previously. This matter of moral and mutual responsibility between patient and physician is all important.

The brief argument which has been presented has essentially been in "reverse." It has been easy to emphasize the fact that no government medical program operates without a fixed fee schedule. This is self evident. It cannot be otherwise.

The converse is more difficult to prove since,

actually, it is possible to have fixed fee schedules without having government medicine! Our intention was not to prove that it was inevitable, but to show how it did — and almost always does — result.

The most important part of the discussion has been minimized. That part is you — the physician. The role of the physician is all important. Let us look at some of the effects of acceptance of fixed fees on physicians.

All “fixed fee” programs, short of complete government medicine, require that those who participate be known to the patients. Any moral physician should look seriously to his ideas of ethics when he consents to have his name appear on listings as a participating physician.

All fixed fee programs imply that illness can be standardized. All physicians realize that this is impossible. The individual variations arising as diagnostic requirements, utilization of time, development of complications, the system of treatment, the response to treatment, the severity of the case and innumerable other factors, all too well known to you, immediately prove the fallacy of the idea of standardization of illness. All medical teaching and tradition repudiates this idea since it has always been accepted that every patient is and must be regarded as an individual, that his problems are singular and that he must be dealt with accordingly.

Fixed fee programs indicate that physicians can be and are standardized and that they are of equal competence or ability. They imply to the general public that all doctors are equal in training and knowledge and that their personalities are the same. They imply that there is no difference in judgment, in the techniques utilized, in the abilities, results obtained, and that no important difference exists in every other portion of the personal care of the patient. It simply states, by implication to the patient, that his doctor is no better than the next. This damages the patient's confidence in his personal physician.

Such ideas, imply acceptance of the false claims of those who relegate medicine to a mechanical matter, that physicians are tradesmen peddling a service or product which is not worthy of individual evaluation.

Strictly from a moral and historical basis, we should remember St. Luke, physician and patron saint of physicians, who, almost 2,000 years ago enunciated the principle that “A laborer is

worthy of his hire.” (Luke 10-7). Not only in the field of medicine but in every area, history is replete with the failures resulting from the rejection of this principle. Repudiation of this basic precept is the heart of the entire system of socialism and it is the aim and purpose of fixed fee schedules.

When one attempts to divorce worth from hire, he is following the socialistic pattern and those who would substitute seniority, need and rights, for responsibilities, efficiency, and initiative are falling into a dangerous position. The conscientious moral physician is the one individual who should espouse and live by St. Luke's principle. It is elementary, unalterably and forever opposed to such practices in the field of medicine, and understanding of this principle illumines these *plans* for what they are.

There is another moral question dealing with the separation of a service from its proper frame of reference. This procedure disguises its true comparative value and is as dishonest as it is to artificially manipulate prices and provide subsidies to hide from the people the true value of goods they buy and sell.

To establish a fixed price for service, basing this price on a technical procedure demanded by the service, completely prostitutes the idea of responsibility. In fact, it denounces or indicates nonexistence of any convertible value of moral responsibility assumed and discharged. If it were possible, it would be more realistic to attempt to place a price on the amount of personal responsibility accepted and to disregard the minor mechanical features. Giving simple medication under certain circumstances entails assumption of responsibility as great as the performance of certain major surgical procedures.

We have discussed the mechanism by which fixed fee schedules result in government medicine by pointing out the fact that none of these programs can operate without a fixed fee schedule. As indicated at first, it is not inevitable that the fixed fee schedule should result in government medicine. The fact that it is a necessary component of government medicine does not of necessity make it a forerunner to government medicine. However, the acceptance of fixed fee schedules in these areas result in the climate which does result in government medicine. This climate is established by the fact that those companies proposing and sponsoring fixed fee schedules and service plans, cover a high per-

centage of the entire population. They are attempting even by utilizing certain unfair means of competition, to cover an ever increasing and greater segment of the population. They are attempting to enter into contracts with the federal government to provide this type of program for all federal employees.

One point many do not realize is that there comes a time when insurance is not profitable to the policy holders. This may be somewhat of a surprise to many, but we must realize that when an entire population or political subdivision is completely included in such a program, especially if a fixed fee schedule is in operation, there ceases to exist any reason for the existence of the insurance company. At this point the brokerage fee of the company can be eliminated or at least transferred to the political unit, as the entire program has become one equivalent to that of government taxing all to provide services for all. We need only view the implications of present acts of our government to see how this operates.

We must admit that our government, having secured a fixed fee schedule or service plan program for special groups, such as the dependents of military personnel, veterans, certain social security beneficiaries, and others, will naturally attempt to extend such benefits into other areas. At present there are a number of proposals in congress to do this very thing. Bills are pending which would entitle any individual ELIGIBLE FOR social security benefits to hospital and medical care at "government" expense. This need only be extended to

include civil servants and another large segment of the population will be receiving "government" medical care. Proposals will then be made to provide similar services for all veterans, later for their dependents. We need go no further. It becomes obvious that at this point the need for private insurance will cease to exist and government medicine in its most hideous form will become a reality.

In the final analysis, the most important factor which produces government medicine through the mechanism of fixed fee schedules exists through and results from the alteration in the area of mutual responsibility between patient and physician. As physicians we can do much to encourage our patients to accept their own responsibilities. However, as physicians, if we accept the intervention of a third party in the patient-physician relation in any area, we are eliminating part of our personal responsibility to the patient. In the areas of fees, through the mechanism of fixed fees or service plans, the temptation seems overwhelming to many — few are willing to examine the processes closely to see the ultimate results.

Our only hope to retain freedom in the practice of our profession is to reawaken our fellow physicians and help them see the loss we face if we abandon principles.

If we maintain the individual patient-physician relationship regardless of personal sacrifices and difficulties, we will not only save medicine— but we will save our beloved nation from the destruction which has been planned by those WHO HATE FREEDOM!

THE JENKINS-KEOGH BILLS **a pension plan for** **SELF-EMPLOYED INDIVIDUALS**

THE CURRENT session of congress now has before it two identical bills (HR 9 and 10) which would allow self-employed persons an income tax deduction for limited amounts placed in a retirement fund. Similar legislation has been introduced in every session of congress since 1951, but, unlike its predecessors, the present bills contain provisions generally acceptable to the life insurance industry.

While these bills are likely to be laid to rest in graves beside those of their ancestors, it is generally conceded that these newcomers have

a better chance for survival. The American Bar Association, American Medical Association, American Dental Association, American Institute of Accountants and other similar groups have formed the "American Thrift Assembly for 10 Million Self-Employed" to promote the enactment of this legislation by congress.

Because of this intensified promotion, and the general interest that many of our readers have shown we have prepared the following outline of the pertinent provisions of these bills.

I. WHO IS ELIGIBLE?

A. Any self-employed individual who meets the following:

B. Tests

1. Must be subject to self-employment tax or

would be subject to it except for exemption as

- a. doctor
 - b. voluntary exclusion of a minister
2. And is not a participant in
- a. qualified pension or profit sharing plan, or
 - b. pension plan established by a governmental body or one of its instrumentalities, or
 - c. pension plan established pursuant to I.R.C. Sec. 501(c)(3) (non-profit organizations)

II. HOW MUCH CAN THE INDIVIDUAL DEDUCT FROM GROSS INCOME?

A. If under 50 years of age on January 1, 1957

1. 10 per cent of net earnings from self employment, or
2. \$5,000, *whichever is less*

B. If over 50 years of age on January 1, 1957

1. Amount as computed in A above, *plus*
2. 10 per cent for each full year age is in excess of 50 but not in excess of 70

C. Provided these amounts are set aside during the taxable year (or within 4½ months thereafter)

D. Maximum deduction — \$100,000 during lifetime

III. WHERE MUST THESE FUNDS BE DEPOSITED? TWO METHODS

A. In a restricted retirement fund

1. Funds must be administered by trustee or custodian
 - a. incorporated bank subject to supervision and examination under laws of U. S., state, or territory
 - b. for income tax purposes custodian treated as a trust
 - c. tax-exempt under I.R.C. Sec. 501(a)
 - d. subject to I.R.C. Sec. 511 (tax on unrelated business income)

2. Trust or custodianship must be created in writing and expressly

- a. prohibit use of funds to pay premiums on restricted retirement policy containing life insurance protection unless insured pays that portion of the premium attributable to protection
- b. provide that trustee or custodian cannot exercise extended term non-forfeiture option on restricted retirement policy

c. provide that trustee or custodian will return any contribution to participant which is in excess of his allowable deduction

d. provide that trust or account is for exclusive benefit of participating self-employed members

3. Trustee or custodian may invest funds in

a. surrender value of restricted retirement policy on life of individual, or

b. stock or securities listed on recognized exchanges, except in corporation that a member of retirement fund owns more than 10 per cent of the voting stock (attribution rules of I.R.C. Sec. 318 apply), or

c. U. S., state, territorial, or municipal bonds and other evidences of indebtedness, or

d. stock in a regulated investment company meeting the requirements of I.R.C. Sec. 851

4. Participant's interest must be unassignable, except

a. may be given right to designate death beneficiaries, and

b. may be given right to transfer death to a similar trustee or custodian

B. In a restricted retirement policy issued by a life insurance company

1. May be annuity, endowment, life contract, or any combination (except term)

a. on life of the self-employed individual

b. who must have all ownership rights

2. Policy must be endorsed to show

a. it is a restricted retirement policy, and it is

b. non-assignable

c. may be new or old policy

3. Portion of premium allocable to cost of the life insurance protection not deductible

a. presumably, full deduction when

b. annual increase in cash value equals or exceeds annual premium paid

IV. HOW ARE AMOUNTS DISTRIBUTED FROM RESTRICTED RETIREMENT FUND TAXED?

A. If received by individual after age 65

1. Payments included in gross income in year received

2. If entire amount received in one taxable year — tax is

a. Five times the increase in tax that would have resulted from including 1/5 of the distribution in gross income

- b. if funds have not accumulated for at least five years before distribution the entire amount is included in gross income
- B. If received by individual before age 65
 - 1. Tax is 110 per cent of the total taxes which would have been paid had the amount been received rateably over taxable year and the four preceding years
 - 2. This is a penalty on early withdrawal
- C. If received by death beneficiary
 - 1. Payments included in gross income in year received
 - 2. If entire amount received in one year the 1/5 averaging rule applies (see IV,A,2,a above)
- D. Distribution of unrestricted retirement policy not taxed until payments received under policy (see below)
- V. HOW ARE AMOUNTS RECEIVED UNDER RETIREMENT POLICY TAXED?
 - A. In general, installment payments are taxed under I.R.C. Sec. 72 as an annuity
 - 1. Three year spread-out rule of I.R.C. Sec. 72 does not apply
 - 2. In computing exclusion ratio premiums deducted not considered as part of investment in contract
 - 3. Surviving annuitant taxed in same manner
- B. If full amount received in one year after age 65 the 1/5 averaging rule applies (see IV, A,2,a above)
- C. If received by individual before age 65 the 110 per cent rule applies (see IV,B, above)
- D. Policy loans considered as payment except
 - 1. Where loan does not exceed one annual premium, and
 - 2. Is repaid within 12 months after premium due date, thus
 - 3. Automatic premium loans protected
- E. If non-forfeiture option, other than reduced paid-up insurance, becomes operative the individual is deemed to have received payment equal to cash value accumulated since policy was endorsed
- F. Death proceeds includible in beneficiary's gross income as received
 - 1. Except portion attributable to premiums paid before policy endorsed as restrictive retirement policy, and
 - 2. Except portion attributable to amount at risk (face less cash value at date of death)
 - 3. If all proceeds are received in one taxable year the 1/5 averaging rule applies (see IV, A,2,a above).

20 MEDICAL SCHOOLS IN LINE FOR MENDS PROGRAM OF DEFENSE DEPARTMENT

TWENTY additional medical schools have applied to participate in the medical education for national defense (MEND) program sponsored by the defense department. Under it, faculty members of participating schools are indoctrinated in military and disaster medicine through symposia and other means being developed by the armed services. Courses, in turn, are offered students. According to Assistant Defense Secretary Frank Berry, 10 schools will be picked from among the 20 early in June. This will bring to 45 the number of schools offering special courses.

At a press conference, Dr. Berry also noted a "sharp" decrease in the number of resignations from the medical branches of the armed services. He attributed this to the passage last year of the career incentive act, which provides for additional pay for doctors serving beyond

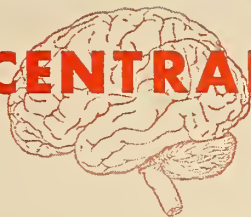
two years and also gives them additional credit toward promotions and retirement. There are enough physicians now commissioned or committed to service to take care of the military's needs for the next fiscal year without having to draft any doctors, he said.

He also reported on the success of a defense mutual aid program in which teams go to foreign countries to help troops of our allies improve their nutrition. Five surveys have been completed (Iran, Pakistan, Korea, Philippines and Turkey) and one is to start in Libya in June.

* * *

Senator Neuberger, who along with Senator Morse has sponsored an amendment to the HEW appropriation, urged that \$500 million be approved for cancer research without a time limit on spending. The two Oregon Democrats want the government to attack the problem on a "crash" basis like the atomic bomb development. The administration asked and the house approved \$46,902,000 for the National Cancer Institute for the 12 months starting July 1.

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By Guillermo Osler, M.D.

WE wish to repeat a belief and suggestion which seems to carry more and more weight as the years go by, — "Without exception patients who have asthma or emphysema **SHOULD NOT SMOKE ANYTHING in ANY AMOUNT at ANY TIME.**" . . . Peters and Prickman ('Minnesota Medicine' for February 1957) are the most recent authors to stress that credo, and the newest members of the group which smokers will either dislike or ignore.

There has been a shift from dicumarol to another type of **ANTICOAGULANT** in the practice of a few of our internist friends. They use a brand of Marfarin, made by Endo Labr., and called 'Coumadin'. . . . It acts as a **HYPOPROTHROMBINEMIA-INDUCING AGENT**, is more potent, is said to be more predictable, and the effects are achieved in 24 hours and last 3 to 5 days. It may be given once a day, and by oral or hypodermic portals. . . . The discoverer of the injectable anticoagulants was Karl Link of Wisconsin; he has a branch of his family in Tucson; and he doesn't have to worry whether one drug supercedes the other, since he invented both of them.

A logical further use of **ANTICOAGULANTS** has been announced by Millikan of the Mayo Clinic. He and his colleagues (Siekert and Whisenant) believe that oral or IV anticoagulants can be used for **FOUR VASCULAR CONDITIONS**, — intermittent insufficiency in the vertebral basilar system with infarction; and actively advancing occlusion of the carotid system. . . . Dr. Wright of Cornell suggested a fifth category, multiple thrombo-embolic episodes. . . . A small point of uncertainty is the diagnosis of some of these conditions by some of us barefoot country docs.

The 'Scope Weekly' (which we suspect is connected with Upjohn's, since it contains no other advertisements,) has **MENTIONED ANOTHER ARIZONAN** in its 'Questions for Doctors — and Answers'. **DR. JOHN L. COGLAND**, internist of Phoenix, was asked "what characteristics do you think are most important in an individual who wants to enter the medical profession?" . . . Dr. Cogland gave the usual answers about physical and intellectual capacity for sustained effort, finances, etc., but added that a potential doctor must have an acquired characteristic, **THE SINCERE DESIRE TO BECOME A GOOD DOCTOR.**

Meniere's syndrome has another therapeutic approach, this time a combination by Roerig & Co.

It is called 'Antivert', and it can be used for other forms of vertigo. . . . The 'combo' includes the antihistaminic and anticholinergic actions of meclizine and the vasodilating action of nicotinic acid.

The supreme example of a mystery-type, hard-to-get approach in describing a new drug has just been 'released' by the Olin Mathieson Chemical Corp., by way of its E. R. Squibb & Sons Division. . . . They tell about "**A NEW STEROID AGENT**" which "may prove to be palliative in certain cases of cancer." . . . They do not say what type of cancer cases may be affected; they don't say when the drug will be 'released' and they don't even give the name of the drug!

A summary of the principles and practice of **HYPOTHERMIA** as an adjunct to anaesthesia in cardiovascular surgery was published in this column last year. We now hear of its use in another field, tho not yet reported. . . . Certain lung lesions require surgery, but are accompanied by hypoxemia due to associated lung damage. 'Cooling' cuts the metabolism, and the need for oxygen, and can occasionally make the surgery safer. . . . We know of two chest surgeons who have used the method in cases of carcinoma and TB with emphysema. Worked out fine.

Here is a **STRANGE CLINICAL RELATIONSHIP** to which we wouldn't pay much attention except that the basic condition is becoming more common, and since we have just seen such a combination. . . . Plotkin, in "Disease of the Chest," urges that we become aware of the **MALFUNCTION OF AN ORGAN WHICH IS NOT THE ONE PRIMARILY INVOLVED!** He refers to involvement of the **GASTROINTESTINAL TRACT** in cases of **PULMONARY EMPHYSEMA** with cor pulmonale. . . . The condition is a strange one, since the usual pattern of 'pain, food-intake relief' does not exist. Small 'silent' ulcers are silent, and even large penetrating ones are atypical. . . . Of 65 autopsied cases of emphysema with right heart disease, 10 had gastric, 11 had duodenal ulcers, and 6 had hypertrophic gastritis. Another series studies by x-ray had a 30 per cent incidence of peptic ulcer. . . . The case we have just seen had pain, but no relief from therapy. We were inclined to blame a previous use of steroid therapy but Dr. Plotkin does not mention such a relationship. We'll have to drop him a query.

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fects of other androgens (tho we think it may be early to guarantee it). It is usable by mouth, and is said to be five times more potent than other oral androgens. . . . Maybe this is progress?

The oddest variant of the original 'Blood Bank' has just been described. At the Central Laboratories of the Imperial Cancer Research Fund (London) there is a FROZEN-TUMOR BANK! . . . It is necessary to have a ready supply of blood, bones, arteries, corneas, etc., but few people think of the need for experimental stock tumors. They have about 50 kinds of transplantable tumors, almost all of which are from animal and fowl sources. . . . The only similar kind of bank is one which keeps bacterial strains, but in incubators. Steenken, at Saranac Lake, has a bank of acid-fast bacilli for the National Tuberculosis Association. . . . It isn't so odd when the basic idea is considered.

There has been a great deal of worry in the public prints about HOW MUCH RADIATION a person gets, and can stand. Most of the non-medical items we have seen were indefinite trash. Most of the medical speeches and papers have been of a similar sort. I'm sure that someone will 'wrap it up' soon. . . . One angle which may or may not be practical is the suggestion of Dr. Poppel, chief radiologist of N.Y.U. & Bellevue. He believes that everyone should keep a 'LIFE-TIME DIARY OF RADIATION'. This would require a nationally-standardized radiation diary system. . . . It seems hard to believe that human beings who can't remember if they have had measles or vaccinations would keep diaries in any numbers. Some people who are versatile and methodical MIGHT have a radiation diary, a past medical history diary, a food and drug reaction diary, a menstrual diary, as well as the ordinary social and political diaries.

E. H. Fell, a Chicago surgeon, writes of 'THE OPEN AIRWAY' in the Jour. Mich. State Med. Soc. He urges that every physician, regardless of specialty, should think of the need for an open passage for an exchange of gases. The ill effects of obstruction can be shown by a simple experiment on animals. . . . We have meant to mention the increasing use of TRACHEOTOMY by certain surgeons. It is done as an elective procedure, sometimes as an adjunct to hypothermia, and allowing the surgical team to keep the bronchi clear in the first post-op hours, and even days.

A mean old M.D. from Virginia (G. J. Boines) has made up a list of 'Mis-conceptions in Poliomyelitis.' It includes one set of comparisons which we haven't ever seen. . . . Under the heading: 'It is an erroneous belief that poliomyelitis is the most crippling of diseases,' it states that for every polio

patient needing help there are 160 with heart disease, 75 with arthritis and rheumatism, 25 with mental disease, 7 with cancer, 6 with cerebral palsy, 4 with TB, 2 with multiple sclerosis, and 2 with muscular dystrophy. . . . We think there are probably modifying factors, — polio is acute; some of the others are not very debilitating; TB is infectious; etc.

YOUR FAMILY HEALTH RECORD

COPIES of "Your Family Health Record" are available to the membership on receipt of request therefor. They may be ordered individually or by the component county medical society, from the central office, Arizona Medical Association.

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Announcement

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Organization Page

CIVICS

By Norman A. Ross, M.D.

"COMPREHENSIVE" INSURANCE

THE FASTEST GROWING HEALTH INSURANCE TODAY.

(Medical Economics, July, 1957)

THE DOCTOR isn't bound by a fee schedule and the patient pays part of major bills under the kind of policy the industry calls 'comprehensive'. By Hugh C. Sherwood.

Does this conflict with Blue Shield philosophy and direction?

"* * * Executive Director, Connecticut Blue Shield — deductible and co-insurance — are seriously limiting their control over medical costs * * *." The payment of "going rates" puts medical care in the constant upward inflationary spiral * * *."

Does this medical economic advisor, in actuality a medical comptroller, propose to affect appreciably national inflation by reducing the physicians' purchasing power — in this area of medical practice — in the State of Connecticut, or, for that matter, with the cooperation of his fellows, in the entire United States?

We are sure this is not the case and that this man is speaking only in terms of obtaining the lowest possible rate for *his* subscribers. We are satisfied that he would agree, and that it is generally accepted as fact, that reducing physicians to lower and lower economic levels can only lead to poorer and poorer medical care — to government subsidy to protect patient and physician, and to the eventual inclusion of all physicians and all patients in a national medical program — in the national interest.

It is common knowledge that our national economy has been in an inflationary spiral since the birth of this nation. The *annual national inflationary rate has been 3 per cent per annum* for the past 50 years.

Comprehensive, deductible, or by whatever name this "fastest growing health insurance" is called, shows that medicine can breathe a sigh

of relief for the intentions of those who design and those who purchase this policy. They do not propose that "going rates" are overpayments to their physicians.

MORE ABOUT "COMPREHENSIVE" INSURANCE

Do you remember when government separated "medical costs" — when public and government considered the physician to be an individual, not a part of a "package deal" in a medical insurance plan, or a medical social effort?

Remember when industrial fees were reduced? It was during the depression, of course. This pause in national inflation promptly affected us.

The Arizona State Industrial Commission's representatives presented graphs to justify their requests for physician fee reductions. The industrial commission dollar was divided, as I remember, 75 per cent for compensation and 25 per cent for medical care. These divided into: hospital payments, sickness supply and drug payments, and payments for physicians' services. The Arizona State Industrial Commission as of the time of that request for reduction of fees showed the justness of their proposal to our satisfaction and we accepted the reduced rate.

Those graphs included the annual experience of the commission from the time of the enactment of the Arizona State Industrial law until the date of the request for reduction in industrial fees. Wouldn't we physicians like to see that depression-born graph extended to this date of the inflationary spiral, and industrial fees and fees of other programs adjusted accordingly and sharply?

The "comprehensive" insurance policy which is being received with such acclaim, considers hospital payment, sickness supply and drug payment, and the payment for physicians' services as distinct and separate items. Even percentages of payment of charges vary.

Recently an adjustment of the industrial fee

schedule has been considered. Is state government's attitude toward medicine changing as it appears in the attitude of industry, the insurance industry particularly?

The prompt and enthusiastic acceptance of

this "comprehensive" insurance by industry and public, compliments American medicine past, present, and future. It is ample proof of the popularity of medicine, "the American way."

"Comprehensive" insurance. I'll buy that.

THE STATISTICS FOR THE VOLUNTEER

By Clarence G. Salsbury, M.D.*

AS a health program of any nature progresses, whether it be on a voluntary basis or at a health department level, it becomes increasingly necessary to reappraise the activities of the program in the light of the intended results. Such a reappraisal, properly evaluated in the light of available statistics, personnel and budget, must of necessity be a prime factor in the development of future plans.

In many areas over the nation, the lack of a large number of newly reported cases of tuberculosis has led to a serious condition of complacency among volunteer and professional workers in the field. Qualified individuals more than suspect that many new cases of tuberculosis are never reported to health authorities. This is undoubtedly true in Arizona for a check of our records for any given week indicates that only one half the physicians regularly return to us the weekly cards we send asking for listing of reportable diseases.

I should like to digress for one moment to remind you that as a statistician it is my obligation to report the data as they appear to me. Whatever opinions I voice are, of course, open to your criticism and certainly we shall not agree in every instance. It is my purpose to raise questions in your minds, which, through discussion at local and state levels will aid us jointly in solving the problems of tuberculosis.

Statistically, there are two measures of the problem which we can readily examine — newly reported cases of tuberculosis and deaths in which tuberculosis is stated to be the cause. It seems logical to examine cases first since there must be a case of tuberculosis before there is a death.

During the year 1956, 1,133 new cases of tuberculosis were reported among Arizona residents. This figure is hardly comparable to data reported in other years since it does not in-

clude persons who came to Arizona for hospitalization from other states, but only those for whom residence in the state is definitely established.

Although the letter of the law provides that a report of a new case of tuberculosis must be made as soon as the diagnosis has been made, it is interesting to note that many new cases are first reported by health facilities rather than private physicians. During 1956, only one in seven new cases was first reported by a private physician. Nearly one in five was reported by the various veterans' facilities. More than one in four was first reported by a hospital. Amazingly enough, one in 16 was first reported by the death certificate itself. For those of you who want more detailed information, the following may be interesting:

| <i>Source of Report</i> | <i>Number of Cases</i> | <i>Percent of Total</i> |
|---------------------------------------|------------------------|-------------------------|
| Private Physicians | 161 | 14.2 |
| TB Sanatoriums | 72 | 6.4 |
| General Hospitals | 168 | 14.8 |
| Chest Clinics | 73 | 6.4 |
| Mental Hospitals and Prisons | 15 | 1.3 |
| Death Certificates | 69 | 6.1 |
| Transfers from other States | 62 | 5.5 |
| Indian Service Hospitals. | 147 | 13.0 |
| All Veterans' Facilities | 214 | 18.9 |
| City and County Health Depts. | 144 | 12.7 |
| Military | 8 | .7 |

Certainly a tabulation such as this raises questions. How did a new case of tuberculosis become a matter of report by an institution unless it was so diagnosed by a physician prior to admittance? Are reports from hospitals the result of routine X-rays or have they too been diagnosed prior to admission? With more than 1/3 of our tuberculosis deaths showing up as new

*Commissioner of Public Health, State of Arizona.

cases even though the death certificate indicates a long duration of the disease, why has the case not been reported previously? What is happening to the many contacts which must have been made in cases such as these latter ones? Certainly many of you can come up with even more questions than just these few.

The importance of the 1,133 newly reported cases of tuberculosis in terms of impact on the population certainly cannot be overlooked. Even if the 1,133 cases are actually all the new cases diagnosed during the year 1956, this still means that, at the prevailing rate, one Arizonan in every 915 will fall victim to this dread disease during the current year. Each of us — our family members — our friends — stands a chance to be numbered among this group.

Translating these data into comparative figures based on recent population estimates indicates the tuberculosis case rate in Arizona for the year 1956 was 110.4 cases per 100,000 population. Similar calculations at county levels indicate a variance from a high of 228.2 in Navajo County to a low of 26.0 in Greenlee County. The complete list of county rates is as follows:

| | <i>Cases</i> | <i>Rate Per 100,000</i> |
|------------------|--------------|-----------------------------|
| Arizona | 1,133 | 110.4 |
| Navajo | 74 | 228.2 |
| Coconino | 64 | 207.9 |
| Apache | 64 | 190.2 |
| Yavapai | 38 | 167.6 |
| Yuma | 54 | 144.6 |
| Pinal | 77 | 141.8 |
| Gila | 29 | 122.9 |
| Pima | 276 | 118.3 |
| Cochise | 29 | 115.4 |
| Graham | 13 | 98.2 |
| Maricopa | 403 | 83.0 |
| Mohave | 4 | 52.7 |
| Santa Cruz | 4 | 50.0 |
| Greenlee | 4 | 26.0 |

Most of us agree that, in general, infectious diseases are not bound by county lines. Consequently we must look to another source to determine the reasons for the wide variance in case rate by counties. Could it be a problem of under-reporting in certain areas? Could it be related to the activities of volunteer agencies in certain areas? Are the differences related to health services available in the several areas? Are there distinct differences in characteristics

of the population at the county level which would be reflected in the tuberculosis case rates?

In relation to this latter question we must of necessity consider race and sex of those reported as new cases of tuberculosis. In 50 of the 1,133 new cases, race and sex were not stated. Of the remaining, 774 were white, 256 Indian, and 53 other races. On a percentage basis, related to the 1,083 cases in which race was stated, seven in 10 were white, nearly one in four was Indian. Relating this information to population data would seem to indicate either a much higher incidence of tuberculosis among the Indian population or an under-reporting of new cases among the white group. From a personal standpoint, it would seem that there are fairly conclusive arguments in both directions. However, we must squarely face the fact that every person residing permanently within the borders of our state must be given due consideration in public health problems as they occur. Race, creed, or color basically do not affect the chance of an infection spreading to another person.

Of the 1,083 cases in which race and sex were stated, 714, (65.9 per cent) were males and 369, 44.1 per cent) were females. In the white population the percentage of males is higher with 70.8 per cent of the 774 white total being male.

While we often have considered tuberculosis as a disease of youth, this certainly is not true. The average age of the 1,133 newly reported cases of tuberculosis for the year 1956 was 42.5 years. The average age of the white group was 45.6 years and of the Indian group 33.1 years. In both groups, males were older than females — 49.3 years and 36.8 years for white males and females respectively and 34.3 years and 31.9 years for similar Indian classifications.

In the total group only one in 10 was under 15 years of age, one in six under 21 years of age, and one in seven was 65 years old and older. Among the white male group, 17 per cent were 65 years old and older.

These few comments, it would seem, might lead us to a revaluation of reporting of new cases of tuberculosis in Arizona — a reconsideration of case-finding plans with special emphasis on plans which will include older persons in our population and set aside any complacency which may exist in our midst.

A second measure of the Arizona tuberculosis problem is an analysis of death records. During

the year 1926, 1,404 tuberculosis deaths were recorded in this state with a rate of 352.3 deaths per 100,000 estimated population. In 30 short years, within the period which all of us can remember, this figure has been reduced to 200 deaths with a death rate of 19.5 per 100,000 estimated population. The 1956 death rate of 19.5 per 100,000 estimated population makes the first time in our history that the rate is under 20 per 100,000. However, this certainly is not just cause for a decision indicating that the problem has been solved. Our state tuberculosis death rate is still the highest in the United States — more than twice the national average of approximately 8.6 per 100,000 estimated population. The final 1956 data on death are not yet complete for either Arizona or the United States, but we are close enough for all practical purposes.

The tuberculosis death rates by county range from a high of 37.8 deaths per 100,000 estimated population in Graham County to a low of zero in Santa Cruz County. The county list in rank order is as follows:

| | <i>Number of Deaths</i> | <i>Rate Per 100,000</i> |
|------------------|-----------------------------|-----------------------------|
| Arizona | 200 | 19.5 |
| Graham | 2 | 37.8 |
| Cochise | 7 | 27.8 |
| Yuma | 10 | 26.8 |
| Apache | 9 | 26.7 |
| Yavapai | 6 | 26.5 |
| Pima | 61 | 26.1 |
| Navajo | 8 | 24.7 |
| Pinal | 12 | 21.0 |
| Maricopa | 75 | 15.4 |
| Mohave | 1 | 13.2 |
| Greenlee | 2 | 13.0 |
| Coconino | 3 | 9.8 |
| Gila | 1 | 4.2 |
| Santa Cruz | 0 | 0.0 |

The wide variance in county tuberculosis case rates is similarly noted in county death rates. Here again it is difficult to understand why counties geographically close should have vastly different rates. From comparison with case rates, there seems to be little if any relationship between a high case rate and a high death rate.

One of the measures of comparison in this instance is the case fatality rate, which expresses the number of deaths per 100 cases. These rates as follows, again in rank order, show considerable variation:

CASE FATILITY RATE

| | <i>Rate Per 100 Cases</i> |
|------------------|-------------------------------|
| Arizona | 17.7 |
| Greenlee | 50.0 |
| Graham | 38.5 |
| Mohave | 25.0 |
| Cochise | 24.1 |
| Pima | 22.1 |
| Maricopa | 18.6 |
| Yuma | 18.5 |
| Yavapai | 15.8 |
| Pinal | 15.6 |
| Apache | 14.1 |
| Navajo | 10.8 |
| Coconino | 4.7 |
| Gila | 3.5 |
| Santa Cruz | 0.0 |

There are those who fallaciously would lead us to believe that a high case fatality rate is a decisive indication of lower quality medical and health service. However, such is not necessarily the truth of the situation for here again the problems of under-reporting enter into the picture with considerable impact.

One final note regarding the characteristics of persons who died of tuberculosis — only 4 per cent died before reaching age 21, and 28.5 per cent were past the age of 65 years. The average age was 52.5 years.

BOOK REVIEW

1957 CURRENT THERAPY edited by Howard F. Conn, M.D. (1957) Saunders. \$11.

Once again editors of American medicine's most successful volume on treatment have collected, evaluated, and sifted thousands of therapeutic procedures for common diseases and disorders. Over 400 of the safest and most effective have gone into this 1957 volume. Make them a part of your practice.

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WORLD MEDICAL ASSOCIATION

MEMBERSHIP in the United States Committee of The World Medical Association offers the opportunity to play a direct role in the world-wide affairs of organized medicine.

In these times, when mutual understanding seems to be the only road to peace, the universal language of medicine can help mend the ills of the body politic, just as it is mending the ills of the individual.

The 500 leaders of American medicine who comprise the U. S. committee of WMA recognize that it is just as important for them to support medicine's international society as it is to be members of their county, state and national medical organizations.

WMA has formulated an international code of medical ethics and a modified Hippocratic oath defining the ideals and obligations of physicians. WMA has also set forth the basic principles that should protect the rights and status of doctors in all governmental social security schemes. And WMA has done more than give lip service to these codes and principles. It is working day and night around the world to protect the profession wherever it is threatened by political interference that would prevent the doctor from serving his patients according to his scientific knowledge and his conscience. Recently, WMA has defended the rights of the medical profession against attempts by various non-medical organizations to draft a code of international medical law.

American physicians are singularly fortunate in having met their social and economic problems by voluntary action, turning back the threat of political domination. Our favored position only emphasizes our responsibility to lead the fight to preserve the principles of good medical practice for our colleagues abroad, and to help them restore these principles wherever they have been compromised.

Doctors the world over hold the same basic ideals and cherish the same hopes for medicine. WMA has provided solidarity and strength by bringing physicians together for the solution of their common problems.

A tangible benefit of membership in the U. S. committee is the privilege of attending the annual assemblies of The World Medical Association as an official observer. The 11th

general assembly was held in Istanbul, Turkey, from Sept. 20 to Oct. 5, 1957. A large number of U. S. committee members were present, many of them combined attendance at the assembly with a tour of European centers of medical interest.

The WMA secretariat assists members of the U. S. committee in making arrangements for foreign travel, providing information on foreign medical meetings and introductions to medical leaders and teachers abroad, and promoting to the utmost the international friendships and contacts of physicians.

Membership in the U. S. committee also brings you the "World Medical Journal," published every other month by WMA. This magazine, edited by Dr. Austin Smith, (editor of JAMA) brings you world-wide information on medical progress and problems in the 53 countries whose national medical associations comprise the membership of WMA.

WMA is speaking for you and working for your interests in its contacts with other world organizations concerned with health or medical care, such as the World Health Organization (WHO) of the United Nations, the International Labor Organization (ILO), the International Social Security Association (ISSA) and the International Committee of the Red Cross.

Some other activities and accomplishments of WMA of interest to every American physician are:

Sponsorship of the First World Conference on Medical Education in London in 1953 and the second such conference to be held in Chicago in 1959;

Promotion of international exchanges of medical students and teachers, lecturers and clinical teaching by traveling teams of physicians;

Development of an international program to improve occupational health services;

Promotion of a freer flow of proved therapeutic agents throughout the world by urging removal of unwarranted trade restrictions and arbitrary licensing requirements in certain countries;

Promotion of medical research, by promoting national pharmacopoeias and defending the rights of individuals discovering new drugs and agents to name them;

Development of an international emblem (in

conference with the International Committee of the Red Cross and the International Committee on Military Medicine and Pharmacy) for identification and protection of medical units and civilian physicians engaged in civil defense in war time; and promulgation of regulations stating the rights and duties of such physicians;

Formulation of plans for a central repository of medical credentials, to enable qualified physicians of every country to file proof of their identity and qualifications with a safe and authoritative international source;

Conducting useful studies of many subjects of world-wide interest to physicians, such as post-graduate medical education, hospital facilities, cult practices, medical advertising, and

effects of social security legislation on medical practice.

The World Medical Association brings you solid benefits as well as the satisfaction of taking part in the international affairs of our profession. You can help make its work more effective by joining the U. S. committee. The nominal dues of active membership in the U. S. committee are only \$10 each year. The committee is seeking to double its present membership of 5,000 American physicians this year. The objectives of WMA are your objectives. It is your voice in world medical affairs. We invite you to add your name and your voice in guiding and strengthening this great organization.

**FROM PROCEEDINGS
HOUSE OF DELEGATES
AMERICAN MEDICAL ASSOCIATION
NEW YORK
JUNE 3-7, 1957**

**Resolution 63. World Medical
Association**

THE following resolution, introduced by Dr. Percy L. Hopkins, on behalf of the Illinois State Medical Society, was adopted by the House of Delegates:

Whereas, The World Medical Association is the only international medical organization representing the practicing profession in the fields of medical economics and medical education and devoted to protection of the freedom of the practice of medicine; and

Whereas, The United States committee of WMA was organized in 1948 to enable all American physicians to render support to the objectives of The World Medical Association and help improve the status of organized medicine internationally; and

Whereas, After nine years only 5,000 U. S. physicians have become members of the U. S. committee, although both the association and the committee are engaged in projects of vital interest to every American physician; and

Whereas, The House of Delegates of the AMA at its clinical session in November 1956 declared: "It is difficult . . . to believe that any physician in the United States . . . is

not a member of the (U. S. committee) WMA . . . Further expansion of the U. S. committee will be necessary if the American viewpoint is to be continually and effectively presented by our spokesmen in The World Medical Association and, through them before other international bodies, to protect the interest and aims of medicine. . . . Surely physicians will will to share in this international effort."; therefore be it

Resolved, That the House of Delegates of the American Medical Association reiterate its support of The World Medical Association and recommend that every member of the American Medical Association join the U. S. committee of The World Medical Association; and be it further

Resolved, That the component state associations be urged to support and give official recognition to the state chairmen and subcommittees of the U. S. committee in order to achieve the objectives of The World Medical Association in protecting the freedom of medical practice and increasing the influence of the practicing medical profession at the international level.

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BROAD SOCIAL SECURITY CHANGES PROPOSED DOCTORS TO BE COVERED

MORE changes in the much-amended social security law have been proposed in a bill (H.R. 8883) introduced July 24 by Rep. Robert W. Kean of New Jersey, a Republican member of the House Ways and Means Committee before which the legislation would be heard. The bill claimed that the amendments could be financed without increasing social security tax rates. His explanation: present full employment at higher wages and increased earnings of the Social Security Trust Fund. (However, another \$600 of income would be taxed at present rate.)

One of eight major points in his bill calls for the compulsory inclusion of physicians under the system, thereby making them eligible for old age and survivors insurance at age 65 or age 50 if totally and permanently disabled.

Other proposals include: (1) Increase maximum wage base from \$4,200 to \$4,800; under present contributory rates, there would be a \$13.50 a year increase in OASI taxes for earnings of \$4,800 or more, (2) pay benefits to dependents of those receiving disability payments, (3) authorize payments from the trust fund toward rehabilitation of those now receiving disability benefits, (4) increase ultimate benefits for those who continue to work after age 65 by a 1 per cent a year delayed retirement benefit, (5) increase maximum family benefits for widows and dependent children from \$200 to \$296.25 a month, (6) increase widow's benefits from 75 per cent to 80 per cent of the worker's primary insurance amount, and (7) cover tips received as wages.

Mr. Kean said he is "very much in favor" of the coverage of physicians.

Reopening of the controversy over compulsory coverage of physicians under social security is in sight for next year, with introduction of this proposed bill to further liberalize the system.

MEDICAL, DENTAL AND ALLIED SPECIALISTS UNDER THE UNIVERSAL MILITARY TRAINING AND SERVICE ACT, AS AMENDED

AMMENDMENTS to the Universal Military Training and Service Act, as amended, adopted in June 1957, replaces the former "Doctor Draft" law and provide for meeting the requirements of the armed forces for medical, dental, and allied specialists until July 1, 1959. Under the new amendments only those specialists who are otherwise liable as regular registrants are subject to induction under the Selective Service law.

The old "Doctor Draft" law under which medical, dental and allied specialists had been liable since 1950 expired July 1, 1957. It had placed liability for service on older doctors, dentists, and allied specialists, at one time up to the age of 51.

One of the principal effects of the new amendments to the basic Selective Service law is to limit liability of doctors, dentists, and allied specialists to age 35 for those deferred on or after June 19, 1951; and to age 26 for others. Public Law 85-62, which amends the basic Selective Service law with respect to these specialists, was signed by the President on June 27, 1957. By placing medical, dental, and allied specialists under the same provisions of law and regulations as other registrants with respect to the upper limit of the age of liability, the 1957 amendments relieve from liability under the Universal Military Training and Service Act, as amended, any such specialist over the age of 32 on the date the amendments became effective — July 1, 1957. This is true because in order to have acquired extended liability under the June 19, 1951 amendments, a registrant must not only have been deferred on or after that date, but also must not have attained the 26th anniversary of his birth by that date. Any man who was 26 on June 19, 1951 would, on July 1, 1957, have been 32 years old.

The amendments in addition provide that:

(1) No person in the medical, dental, and allied specialist categories shall be inducted if he applies for an appointment as a Reserve officer and is or has been rejected for such an appointment on the sole ground of physical disqualification.

(2) The President may order to active duty for not more than 24 consecutive months any member of a Reserve component who is such a specialist, who is under 35, and who has not performed at least one year of active duty in the armed forces.

(3) Any such person called or ordered to active duty from a Reserve component of the armed ofrces and who serves on active duty as a specialist for 12 months or more, shall upon release from active duty or within six months after release, be given an opportunity to resign the commission unless he is otherwise obligated to serve on active training and service in the armed forces or in training in a Reserve component by law or contract.

(4) Any physician or dentist qualified for a Reserve commission shall, so long as a need for his services exists, be given an opportunity to volunteer for active duty of not less than 24 months.

(5) The President may prescribe rules and regulations for the selection or induction of persons by age group or groups and for the selection and induction of persons qualified in needed medical, dental, or allied specialist categories pursuant to requisitions submitted by the Secretary of Defense.

(6) Qualified specialist aliens liable for induction shall not be held ineligible for appointment as commissioned officers solely on the grounds that such alien specialists are not citizens or have not declared their intention of becoming citizens.

(7) Any qualified person who is liable for induction, or who is ordered to active duty as

a member of a Reserve component as a physician, or dentist, or in an allied specialist category, shall be appointed, reappointed or promoted to such grade or rank as may be commensurate with his professional education, experience or ability provided that any person in a needed medical, dental, or allied specialist category who fails to qualify for, or who does not accept, a commission, or whose commission has been terminated, may be used in his professional capacity in an enlisted grade.

(8) Periods of active duty performed by such specialists in student programs prior to receipt of appropriate professional degree or in intern training shall not be counted toward establishing the qualification of such specialists for classification as a veteran exempt from liability for training and service.

(9) It is the sense of Congress that the President provide for deferment of optometry students and premedical, preosteopathic, preveterinary, preoptometry, and predental students in numbers at least equal to the numbers of such male students now studying in colleges and universities.

(10) Public Law 62, 85th Congress, amending the Universal Military Training and Service Act, as amended, to provide service liability for persons in medical, dental, and allied specialist categories, expires on July 1, 1959.

With the expiration of the requirement for special registration of medical, dental, and allied specialists, such specialists under the amendments of June 27, 1957, should notify their local boards within 10 days of the attainment of degrees in these fields.

Our Amazing Arizona

**FAULTS OF ONE
NOT FAULTS OF ALL***

By Columbus Giragis

DR. JOSEPH H. KRIS, veteran Long Island physician, deserved the condemnation heaped upon him by high medical officials, public officials and private citizens when he presented his bill in the sum of \$1,500 for administering to little Benny Hooper, who was rescued from a narrow well at the family home in Manorville, N. Y.

A medical committee poured oil on the in-

dignation created when Dr. Kris presented the bill to the parents of the little boy, and it has been announced everyone is happy with the decision that any money contributed by well-wishers, and earmarked for medical expenses, would go to the National Foundation for Infantile Paralysis.

Dr. Kris deserves all the resentment he created, but the medical profession does not deserve to be judged by his stupidity.

Screwballs who advocate socialized medicine, right here in our amazing Arizona, were quick to grab the Kris callousness and flay the entire medical profession.

* * *

THE COMMITTEE, a mediation group set up

* (Arizona Republic - Column, 6-30-57.) Reproduced by permission of author.

by the Suffolk County Medical Society, quickly handled the disgusting incident. It is a committee said to be similar to such committees elsewhere, set up to amicably settle matters when people feel their doctor bills are too high.

For almost 40 years I have had much need to use the medical profession, and honesty impels the admission that there was never any need for such a committee. On the contrary, many of the charges were too low.

I have never been confined in other than private hospitals and sanitariums and was never overcharged.

No doctor, or dentist, or hospital or sanitarium employee was overpaid, or tried to exact an exorbitant fee.

I have won quite a few arguments, and experienced no defeats or draws with patients who were as ungrateful as a dog which bit the hand that fed it. I could never refrain from castigating male and female ingrates who undertook to abuse doctors and nurses who did everything possible for them, except suffer their physical pains and mental miseries.

* * *

I HAVE HEARD FOLKS gripe about medical and hospital bills, when they had failed to pay those bills, yet managed to buy a new automobile every time a new model became available.

I have never known a doctor who did not

do some work for which he never expected to be paid — because some patients were broke.

No Dr. Kris can smear those men and women — in my humble estimation.

In northern Arizona a doctor would get out of bed at midnight, or 2 or 4 o'clock in the morning, when the thermometer registered below zero. It was too cold to start his car. He could not drive, anyway, as he was suffering from gout and was on crutches. He used his crutches to come (about a block) to my bedside when the going was really rough.

* * *

NO POLITICIAN, without exception, ever gave anyone that breed of consideration!

I would rather leave my wallet pocket unbuttoned in a group of medical men than in a group of politicians, not excluding some of those U. S. senators who justly criticized Dr. Kris.

Despite the work of the Suffolk County medical mediation committee, he did not reflect credit on the medical profession.

That profession should not be judged by Dr. Kris in this instance, nor should all politicians be judged by those who made the penitentiary.

I have been in church with some of the rudest chislers I have known, but no one accused the entire congregation of stealing chickens on the way home.

KREBIOZEN

THE AMERICAN Cancer Society is dedicated to finding, at the earliest possible date, the cause of cancer and means of preventing and curing it. It is anxious to see that every promising lead is fully, completely and fairly investigated. It also must do everything possible to prevent the public from being misled by enthusiastic exploitation of unproved methods which may lead to unnecessary loss of life if patients use these unproved methods at a time when their cancers might be cured or more successfully treated by accepted methods.

So far, only surgery and radiation are recognized by physicians as cures for cancer and then only for certain cancers diagnosed early and treated promptly. It is generally accepted that in the future chemicals, biologicals or drugs may be found which will cure cancer.

Many thousands of chemicals and biologicals

have been tested in this country's laboratories and medical schools for possible anti-cancer properties. Some few have demonstrated these properties and are now in common use by physicians throughout the country in the management of cancer. No one of these is claimed as a cure — using "cure" in its generally accepted sense of five-year survival, free of the disease.

Krebiozen, an agent whose formula is either unknown or kept secret, has been promoted by the Krebiozen Foundation of Chicago since 1951. Studies of 100 case histories of patients treated with Krebiozen by a subcommittee appointed by the Committee on Research of the American Medical Association were reported in a Journal of the American Medical Association on October 27, 1951.

This committee was composed of faculty members of medical schools located in Chicago, exclusive of the University of Illinois. The case

histories studied were obtained from seven independent sources throughout this country. The report of this committee was that the patients treated with Krebiozen failed to show objective evidence of improvement. Another committee appointed by Dr. Stoddard, the then president of the University of Illinois, headed by Dr. Warren H. Cole, head of the Department of Surgery of the University of Illinois, reviewed the records of 500 case histories of patients treated with Krebiozen. This committee reported on September 10, 1952. They also found no objective evidence that Krebiozen was effective in the treatment of cancer.

We have been informed that Kriebiozen has been used by individual physicians since 1952 throughout the United States and that case histories have been assembled from reports received from these physicians in the offices of the Krebiozen Foundation in Chicago. We understand that these reports are the basis of the monograph published in 1956 by Doctors Ivy, Pick and Philips.

So far as we are aware neither the Krebiozen Foundation nor anyone associated with it has ever requested the American Cancer Society or the National Cancer Institute to make or arrange for an independent and objective review of these case histories.

Neither has the Kriebiozen Foundation ever requested the American Cancer Society or the National Cancer Institute for financial support of plans for an independent and objective evaluation of this drug.

Both the National Cancer Institute and the American Cancer Society have committees of independent scientists who would carefully consider any proposal from the Krebiozen Foundation for a fair evaluation of this substance and should the Foundation ask for an independent review of the case histories referred to above, as a necessary prelude to such an evaluation, the American Cancer Society would take the initiative of setting up a competent committee to make such a study.

STUDY OF RADIOACTIVE FALLOUT VICTIMS REPORTED

THE JULY 13, 1957 issue of the *Journal of the American Medical Association* carried a report based on a two-year followup study made of 84 Marshall Islands natives who were accidentally exposed to radioactive fallout. The report showed them to be in generally good health and recovering from radiation damage. The study was made by Dr. Robert A. Conard, Brookhaven National Laboratory, Upton, N. Y., Lts. Charles E. Huggins, (MC), USNR and John B. Richards (MC), USNR, Naval Medical Research Institute, Bethesda, Maryland, Dr. Bradford Cannon, Boston, Mass., and Col. Austin Lowrey, (MC), USN, Walter Reed Army Hospital, Washington, D. C.

The study showed increasing recovery from serious blood cell damage among the exposed group. All but 15 had recovered from skin injury, the authors said.

The residual skin damage was mainly in the form of pigment aberrations. Four persons also showed scarring. Nearly all of the exposed persons had suffered some type of skin damage and loss of pigmentation. Normal pigmentation had returned in most cases at the end of one year.

While the people's white blood cell levels were still below normal, the two-year levels were not considered to be a serious condition according to the report. It also appeared that the lowered white cell levels had not lowered the resistance of the people to the disease; a chicken pox epidemic had occurred between exposed and unexposed persons without any serious complications.

One interesting finding was slight retardation in the growth and development in the exposed male children as compared with unexposed children. The authors said no significance could be attached to these slight differences because of the small number of children (nine boys) and uncertainties of racial backgrounds; however, they noted that similar retardation was found among Japanese boys surviving the Hiroshima-Nagasaki atomic bombings.

The report also said: One man died within an hour after becoming seriously ill. Autopsy showed the cause to be hypertensive heart disease with congestive heart failure — five babies born between the first and second year studies had developed normally and were free of any

apparent abnormalities. Examination of the eyes showed no radiation effects although there is still a possibility that damage may occur at a later date — radioactive analysis of bone samples taken from the man who died revealed no radia-

tion that could be definitely associated with fallout deposition in the bones. In fact, the radioactivity that was present was "well below the accepted tolerance limits" and within the range found in the bones of Americans.

INFLUENZA — 1957

A FACT SHEET*

INTRODUCTION

DURING recent weeks the eyes of the health and medical profession of this country have been on the influenza epidemic which swept through the Far East. Although thus far only sporadic outbreaks have occurred in this country, affecting roughly some 13,000 people, the important consideration is what will happen during the fall and winter months. Experts in the field say the distinct possibility of an influenza epidemic in the United States this coming winter cannot be ignored. This fact sheet generally summarizes the most important aspect of the situation as of this date.

* * *

ASIAN INFLUENZA

Influenza has been known for centuries under a variety of names but, except for the pandemic of 1918, the illness was regarded lightly.

Over the past 25 years certain strains of Type A virus and Type B virus have been the causative agents of cyclic outbreaks of influenza.

The current epidemic in the Far East and sporadic outbreaks in the United States and elsewhere are caused by a new strain of Type A virus known as the Asian strain.

There is a distinct probability that the current influenza epidemic will increase and may develop into pandemic proportions by late fall or winter. It has already touched on every continent. There is also the possibility of an increase in virulence of the at-present mild infection. (No such increase in virulence has been noted to date.)

A properly constituted vaccine containing the new strain of Type A virus has been developed. It represents the only preventive tool at our command. Six manufacturers, licensed to produce it, are working now on accelerated production schedules.

Influenza vaccines have been proved effective

and safe in controlled studies conducted by the military services.

The Public Health Service, in cooperation with the State and Territorial Health Officers Association and the American Medical Association is promoting a nationwide voluntary program of vaccination against the prevalent strain of influenza. The first 8 million cc. of the new vaccine will be available by mid-September.

There will be no priorities set at the federal level. The vaccine will be available on the open market. The cost per shot to the individual is not known at present.

Historical Aspects

Outbreaks of influenza have attracted attention for centuries. The disease has been known through the ages under a variety of names — the jolly rant, gallant's disease, "the fashionable illness" and more recently as the flu, or the virus.

Sudden appearance and widespread involvement of all ages and kinds of people have always been characteristic of the illness.

The first epidemic with origin in America was described in 1758. The usual high morbidity and low mortality features of the disease were in evidence. Asia and Europe were hit with a pandemic in 1782.

In the 19th and 20th centuries, recurrences were high-lighted by the pandemics of 1890 and 1918. The pandemic of 1918-19 which swept over nearly every continent and island of the globe, has been described as one of the great human catastrophes of all times. For the first time in the recorded history of the disease, mortality was high.

Unusual features accompanying the current epidemic of Asian influenza have reawakened interest in events just preceding the 1918-19 holocaust.

The 1918 Pandemic

In January 1916, influenza was reported to be epidemic in 22 states but was described as a mild type of illness. In December 1917, influenza

*U. S. Department of Health, Education, and Welfare Public Health Service.

was prevalent in Camp Kearny, California, and by January 1918 had reached other Army camps. It was still said to be mild. In the spring, localized outbreaks occurred in the civilian population and mortality from pneumonia rose sharply in certain cities.

Mild epidemics of influenza were reported in various localities in Western Europe in April and May of 1918 and in June and July more extensive outbreaks occurred in Great Britain and in Europe, China, India, the Philippine Islands and Brazil. In these countries, mortality rose moderately.

During August 1918 epidemics of influenza were reported in Greece, Sweden, Switzerland, Spain, the West Indies, and late in the month it appeared almost simultaneously in Camp Shelby, Mississippi, and in Boston, Massachusetts. In September, it appeared in rapid succession in other cities and Army camps along the Eastern Seaboard and the Gulf of Mexico and spread rapidly westward across the country. By October, the epidemic had involved the entire United States except for a few isolated areas.

The interval between the peaks of the epidemic in Boston and San Francisco was about four weeks, and the peaks in the number of deaths usually were reached in about one month following the beginning of the epidemic in a community or area. In some areas there was a return of the epidemic in January and February 1919. It was marked in the cities where the autumn epidemic had been less severe. Thus, the spring of 1918, an explosive outbreak with high mortality in the fall, and a third phase of recrudescence early in 1919.

In the Army over a million men were hospitalized for influenza and pneumonia, and of these there were more than 44,000 deaths. There were some 5,000 deaths among naval personnel.

It has been estimated that there were 20 million cases of influenza and pneumonia in the United States in 1918-19 with approximately 850,000 deaths. The latter figure includes deaths reported in the military.

Since 1918

In recent years mortality from all causes has not shown a marked rise during influenza epidemics and deaths attributed to influenza and pneumonia have been decreasing in numbers. The principal impact of influenza epidemics since 1940 has been seen in an excess of deaths during an epidemic from causes other than in-

fluenza and pneumonia, such as heart disease and other chronic diseases. As expected these deaths occur in the older age groups.

Little is known of the true prevalence or incidence of influenza in recent years because reporting of individual cases is unreliable. The disease cannot be clinically differentiated from other types of upper respiratory infections which may also be occurring during an epidemic of influenza, and it is not practicable to obtain laboratory diagnosis of all suspect cases. Absenteeism rates in schools, industrial, or other working groups may raise, but such indices are more useful in alerting health officers to the possibility of an influenza epidemic than in providing figures on incidence.

Since 1948, the Influenza Study Program, sponsored by the World Health Organization, has maintained a system of reporting specific diagnoses of influenza in the United States, Canada, South America and Europe. Approximately 40 collaborating laboratories are located in universities, hospitals, Public Health Service and military installations.

Etiological Aspects

The virus of human influenza was isolated in 1933 and 1934 following intranasal instillation of throat washings in ferrets, by Smith, Andrewes, and Laidlow. Since that time several strains and types of influenza virus have been isolated.

Three immunologically distinct types of influenza virus (A, B, and C) have been identified, with some four serologically intersecting groups of Type A strains.

Such viral isolations have made it possible to recognize the cyclic nature of certain strains of influenza virus as well as to chart the course of an epidemic.

In the United States during the 10 year period, 1933-43, combined clinical, epidemiologic and microbiologic studies have revealed six definite epidemics of Influenza A. In 1947, A-prime viruses completely replaced the earlier groups and the etiologic agents of Influenza A have been variants within the A-prime set during the last 10 years on a world-wide basis.

It is a new strain of A-prime virus, now termed the Asian Influenza A-virus, which is responsible for the current epidemic.

Present Epidemic

The current epidemic was first reported in Hong Kong and Singapore during the latter half

of April 1957. Then in rapid succession, epidemics occurred in Taiwan, the Philippines, the Malayan States, Japan, India and other areas.

Army medical teams in Japan investigating the early epidemics noted that the isolated virus appeared unusual in laboratory tests and sent the virus to this country for antigenic analyses. These analyses demonstrated that the virus is Type A, but is antigenically different in the hemoagglutination inhibition test from any previously known Type A strain. Information to date suggests that little protection against the new virus is gained by previous vaccination with existing influenza vaccine.

Laboratory confirmation of sporadic outbreaks of Asian influenza in both the military and civilian populations have been received from a number of different areas of the United States. Beginning June 2, a series of influenza outbreaks were reported among ships which had been berthed in Narragansett Bay, Newport, Rhode Island. The means of introduction of the virus to this population could not be ascertained and spread of the epidemic was erratic. Subsequently infections with Far East strain influenza virus have been reported in San Diego, Monterey, Davis, and San Francisco, California; Cleveland, Ohio; Lexington, Kentucky; and Salt Lake City, Utah.

The highest attack rates (70 per cent) have occurred among recruits in the military services. The other large outbreaks reported in the United States have been predominantly in groups of young people living, or brought together, in environments that favor the spread of infection. The Asian strain was found at the Boy Scouts International Jamboree at Valley Forge, Pennsylvania, and among delegates attending a young people's church camp at Grinnell, Iowa. Since their return home from these meetings, reports of "respiratory and influenza-like illness" have come in from Scouts and delegates in Texas, New Mexico, South Carolina, Connecticut, Massachusetts, Missouri, Louisiana, Michigan, New York, Rhode Island, Maryland, Illinois, Indiana, Kentucky and Minnesota.

To date there has been little variation in severity of the illness and only two deaths have been reported to the United States resulting from complications of influenza.

Clinical and Public Health Aspects

The experience in Asia and in the United States since the new type of virus was intro-

duced provides no basis for predicting an increase in severity of infection in the coming fall and winter or during the next year or two. The present concern arises largely from the possibility that a more virulent variant of the Asian type may emerge. The severity of the 1918 influenza epidemic is believed to have been due to some such mutation which exposed the population to a virus or viruses with antigenic properties radically different from those strains to which they have been previously exposed.

Clinically influenza is usually characterized by abrupt onset, prostration, fever as high as 104 degrees, headache, myalgia, cough and sore throat. X-ray examinations of the chest usually show no abnormal findings. Leukopenia is common in uncomplicated cases. The febrile period usually lasts 3 to 5 days, following which the patient may complain of extreme weakness for several more days.

In laboratory diagnosis of individual cases, the virus may be isolated from secretions of the nose and throat taken early in the course of the illness. Since laboratory procedures necessary to confirm diagnosis cannot be completed in the short time the patient is still acutely ill, they are of little value to the physician in prescribing treatment. However, they are necessary to confirm the presence or absence of influenza in a community.

Even when considered mild in terms of fatality, influenza epidemics cannot be regarded as innocuous. Illnesses usually are prostrating for two or more days and are often followed by a period of lassitude and weakness. In an epidemic, medical care facilities may be temporarily overtaxed, attendance in school interrupted and the entire economy disrupted by absenteeism in all types of industry, some of them in critical areas.

Immunological Aspects

When a new variant appears whose antigenic structure is widely different from that of previously isolated viruses, a vaccine which has been satisfactory hitherto may be relatively ineffective against the new strain. This happened in 1947 when the A-prime influenza virus was identified. The same problem has confronted manufacturers of vaccine today; the introduction of the new Asian virus making a new vaccine necessary.

Influenza vaccines have been used most ex-

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many patients with **MILD** involvement can be effectively
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(2) joint inflammation (3) anxiety and
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in three formulas: 'MEPROLONE'-5—
5.0 mg. prednisolone, 400 mg. meproba-
mate and 200 mg. dried aluminum hy-
droxide gel. 'MEPROLONE'-2—2.0 mg.
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200 mg. dried aluminum hydroxide
gel. 'MEPROLONE'-1 supplies 1.0 mg.
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tensively in special population groups such as military personnel, schools and certain employee groups. Studies in the military reveal that a properly constituted vaccine is 70 per cent effective under epidemic or endemic conditions and that reactions to the vaccine are quite rare. Individuals known to be sensitive to egg are *not* given the vaccine since virus is grown in embryonated eggs.

In recent years the nature of influenza in this country has not warranted the use of influenza vaccine except on a group basis to minimize absenteeism or in so called priority groups. However, the present influenza epidemic, with its rapidity of spread and high attack rate is sufficiently unusual to press for immunization against the new strain of influenza virus. As a

properly constituted vaccine is the only preventive for this disease, the Public Health Service, with the Association of State and Territorial Health Officers and the American Medical Association, plans to promote the use of the vaccine as soon as it becomes available.

For the first time in history we are in the fortunate position of being ahead of an impending epidemic of influenza. On the basis of past experience it seems probable that influenza will continue to spread but will not be highly epidemic in this country until fall or winter when outbreaks may be anticipated. Even though this is still only a possibility, any preparations which need to be made to meet it must be accomplished now. After a pandemic starts, it will be too late.

WHAT MAKES BLUE SHIELD DIFFERENT?

ONE FREQUENTLY hears doctors ask, "Isn't Blue Shield just 'another insurance company'?" This question usually comes from a member of the generation of new doctors who have come into practice since the early '40s, and who know little of the desperate challenge that gave rise to the Blue Shield idea and the hard work with which its accoucheurs gave it birth.

Blue Shield represents a vast and triumphant effort on the part of American medicine to prove to the people of the United States that, with their help, their doctors can solve urgent problems of medical economics without governmental interference or dictation. Blue Shield was created at a time when the insurance industry questioned the actuarial feasibility of voluntary medical care insurance on any large scale, and even many doctors feared that a voluntary program would inevitably lead to a compulsory health insurance system under government auspices.

Blue Shield has little in common with commercial accident and health insurance beyond the fact that it utilizes actuarial principles. Where the insurance company underwrites selected groups to produce a profit, Blue Shield, reflecting the service ideas of the medical profession, makes its services available to the entire community, at rates based on the needs and experience of the community — including most particularly those people in the low income groups who most need medical prepayment protection.

Where commercial insurance companies offer cash allowances which may or may not have any relation to the doctor's normal charge for his services, Blue Shield's schedules of payment are negotiated and approved by the local medical profession. In most areas, Blue Shield benefits take the form of fully paid professional services, through the cooperation of the "participating physicians." Even where "service benefits" are not provided by formal agreement of the doctors, Plan schedules generally attempt to approximate the normal charges of the local physicians for services rendered people in the lower income brackets, and the local physicians frequently accept these fees as full payment.

Blue Shield Plans are distinguished by non-profit operation, which means that their only purpose is service to the people and their doctors. Non-profit operation also means that all the funds contributed by the subscribers are available for payment of benefits, with a minimum retained for actual operating costs and reserves for future claims.

Over and above all requirements of state law, Blue Shield Plans are required to maintain strict "membership standards" in order to use the name and symbol "Blue Shield." These standards provide that the Plan must have the continuous approval of the local medical society; must render an annual report to the society; and must secure the formal participation of at least 51 per cent of all the physicians in the Plan area.

Blue Shield utilizes insurance principles, but, because of the participation of the great majority of American physicians, it is able to trans-

cend the limits of insurance — to become a true community service on behalf of America's physicians.

COURT RULING SAID TO PROTECT REDUCING PILL ADVERTISING

TWO GOVERNMENT regulating agencies would like to be more active against exaggerated claims for weight-reducing pills, but they are restrained by federal court decisions favoring the manufacturers. This was the gist of testimony presented by the heads of Food and Drug Administration and Federal Trade Commission to a House subcommittee that is investigating the situation. Earlier, medical witnesses had told the committee that the pills cannot in themselves bring about loss of weight, and that some of them may present a health hazard to certain persons.

FDA is authorized to act against foods or drugs that are "misbranded," by carrying false claims or other untruths either on their labels or on accompanying literature. FDA Commissioner George P. Larrick said that 13 years ago successful action was taken against a weight-reducing product that had harmful ingredients, and that now "the dangerous type of reducing preparation has all but disappeared completely from the scene."

However, the government was not so successful when it moved against manufacturers charged with exaggerating the weight-reducing

capabilities of a candy that contained vitamins. The judge ruled the advertising claims were not unduly exaggerated, as consumption of candy before a meal naturally would cause some loss of appetite. As a consequence, Mr. Larrick said, FDA has been forced to conclude that "regulatory action in this field must be very carefully selected and that it would not be feasible to bring cases where the labeling claims were qualified. . ." However, the agency is preparing one action against a weight-reducing product.

Federal Trade Commission can act against any false or misleading advertising (broader than FDA's power). FTC Chairman Sigurd Anderson explained, however, that the decisions cited handicapped his agency's policing. He commented: "Our regulation of the products sold as appetite depressants . . . has been limited largely to claims implying that the product itself has an effect on metabolism, claims of weight loss in definite and predetermined amounts, or special claims such as official government approval of the product." He also complained to the subcommittee that congress had turned down an FTC request for \$33,500 extra for scientific investigations and testing.

The subcommittee does not plan to make any recommendations for remedial legislation this session of congress, but might offer a bill after congress reconvenes in January.

AEC PUBLISHES HANDBOOK ON WEAPONS EFFECTS

THE U. S. Atomic Energy Commission has announced publication of a 579 page handbook providing the latest knowledge of weapons effects.

The handbook entitled "The Effects of Nuclear Weapons" was prepared by the Armed Forces Special Weapons Project of the Department of Defense at the request of the Atomic Energy Commission and with the Commission's assistance. The book includes the results of observations and experiment in laboratory work in nuclear test detonations since 1950.

This book is on sale for \$2 per copy by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

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BOARD OF MEDICAL EXAMINERS STATE OF ARIZONA

826 Security Building
Phoenix, Arizona

The Board of Medical Examiners of the State of Arizona at a regular meeting held Saturday, July 20, 1957, issued certificates to practice medicine and surgery in this state to the following doctors of medicine:

- | | |
|--|---|
| <p>Alway, James D., Jr. — 1332 North 2nd. Street, Phoenix, Arizona</p> <p>Comess, Morton S. — 800 North First Avenue, Phoenix, Arizona</p> <p>Crisp, William E. — Ohio State University Hosp., Columbus, Ohio</p> <p>Davis, Charles E. — St. Joseph's Hospital, Phoenix, Arizona</p> <p>DeLozier, Joseph B. — 5410 S. Central Ave., Phoenix, Arizona</p> <p>DeVries, Paul H. — 116 N. Tucson Blvd., Tucson, Arizona</p> <p>Dunn, William J. — 1009 W. Green Street, Champaign, Illinois</p> <p>Ebersole, Carl M. — 2435 E. Adams St., Tucson Arizona</p> <p>Gambacorta, Otto — 130 S. Scott Ave., Tucson Arizona</p> <p>Gibson, Richard W. — 433 West Osborn, Phoenix, Arizona</p> <p>Gilbert, David B. — Payson Clinic, Payson, Arizona</p> <p>Grossman, Samuel N. — 9730 Wilshire Blvd., Beverly Hills, Calif.</p> <p>Haddock, Douglass A. — 5700 Pontiac Trail, Orchard Lake, Michigan</p> <p>Harmon, Lewis G. — 4251 Gregory Rd., Gregory, Arizona</p> <p>Herman, Jack J. — 2021 North Central Ave., Phoenix, Arizona</p> <p>Hunter, Willard Smith — St. Joseph's Hospital, Phoenix, Arizona</p> | <p>Jensen, Ralph — Route No. 1, Box 431, Shelbyville, Tenn.</p> <p>Johnston, Howard H. — Miami-Inspiration Clinic, Miami, Arizona</p> <p>Kavan, Lucien C. — John Sealy Hosp., Galveston, Texas</p> <p>Kavanagh, Thomas W. — 2021 North Central Ave., Phoenix, Arizona</p> <p>Keeling, Robert F. — New Cornelia Hospital, Ajo, Arizona</p> <p>Kliwer, Paul W. — Wickenburg, Arizona</p> <p>Lovekin, William S. — Sage Memorial Hosp., Ganado, Arizona</p> <p>MacDonald, Donald C. — 1143 Webster, Birmingham, Michigan</p> <p>McGovern, Richard E. — St. Joseph's Hospital, Phoenix, Arizona</p> <p>McGregor, John G. — P. O. Box 82, Fort Sam Houston, Texas</p> <p>Nichols, Dean — Good Samaritan Hospital, Phoenix, Arizona</p> <p>Peterson, Rexford A. — 340 E. Eleventh St., Durango, Colorado</p> <p>Schmidt, Charles D. — 84 East 7500 South, Midvale, Utah</p> <p>Sechrist, Gilbert L. — 1301 North Beaver Flagstaff, Arizona</p> <p>Shaw, Wayne R. — 417 South Dixie, Eastland, Texas</p> <p>Thayer, Robert H. — 228 Leavell Dr. Van Horne, Park, Fort Bliss, Texas</p> <p>Underwood, George M. — 1221 W. Hazelwood St., Phoenix, Arizona</p> <p>Watson, John B. — 6253 Hollywood Blvd., Hollywood 28, Calif.</p> |
|--|---|

September 1, 1957 Progress Report from the Poison Control Information Center at the University of Arizona College of Pharmacy

THE POISON Control File Advisory Committee has met twice to approve the poison file cards for duplication. The entire file will be duplicated and distributed to the participating hospitals throughout the state as quickly as the remaining cards are approved by the Poison Control Committee of the Arizona Medical Association.

Since the August 1 report, 29 poisoning cases have been received at the poison control center. The statistics of the reports in rounded figures are as follows:

AGE:

- 59 per cent involved under 5 year group
- 14 per cent involved 6 to 15 year age group
- 18 per cent involved 16 to 50 year age group
- 3 per cent involved 31 to 45 year age group
- 3 per cent involved over 45 year age group

NATURE OF INCIDENT:

- 83 per cent accidental
- 17 per cent intentional

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ANNOUNCING: a NEW antidiarrheal for more certain control of virtually all diarrheas



addition of neomycin to the effective DONNAGEL formula assures more certain control of most of the common forms of diarrhea. Neomycin is an ideal antibiotic for enteric use; it is effectively bacteriostatic against neomycin-susceptible pathogens; and it is relatively non-absorbable.

The secret of DONNAGEL WITH NEOMYCIN's clinical dependability lies in the comprehensive approach of its rational formula:

| COMPONENT (each 30 cc. (1 fl. oz.)) | ACTION | BENEFIT |
|--|--------------------------|---|
| Neomycin base, 210.0 mg. (as neomycin sulfate, 300 mg.) | antibiotic | Affords effective intestinal bacteriostasis. |
| Kaolin (6.0 Gm.) | adsorbent, demulcent | Binds toxic and irritating substances. Provides protective coating for irritated intestinal mucosa. |
| Pectin (142.8 mg.) | protective, demulcent | Supplements action of kaolin as an intestinal detoxifying and demulcent agent. |
| Dihydroxyaluminum aminoacetate (0.25 Gm.) | antacid, demulcent | Enhances demulcent and detoxifying action of the kaolin-pectin suspension. |
| Natural belladonna alkaloids: hyoscyamine sulfate (0.1037 mg.) atropine sulfate (0.0194 mg.) hyoscine hydrobromide (0.0065 mg.) | anti- spasmodic | Relieves intestinal hypermotility and hypertonicity. |
| Phenobarbital (1/4 gr.) | sedative | Diminishes nervousness, stress and apprehension. |

Robins

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INDICATIONS: DONNAGEL WITH NEOMYCIN is specifically indicated in diarrhea or dysentery caused by neomycin-susceptible organisms; in diarrhea not yet proven to be of bacterial origin, prior to definitive diagnosis. Also useful in enteritis, even though diarrhea may not be present.

SUPPLIED: Bottles of 6 fl. oz. At all prescription pharmacies.

DOSAGE: Adults: 1 to 2 tablespoonfuls (15 to 30 cc.) every 4 hours. Children over 1 year: 1 to 2 teaspoonfuls every 4 hours. Children under 1 year: 1/2 to 1 teaspoonful every 4 hours.

ALSO AVAILABLE: DONNAGEL, the original formula, for use when an antibiotic is not indicated.

OUTCOME:

100 per cent recovery

TIME OF DAY:

27 per cent occurred between 6 a.m. and noon

35 per cent occurred between noon and 6 p.m.

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3 per cent occurred between midnight and 6 a.m. (a scorpion sting at 5:30 a.m.)

CAUSATIVE AGENT:

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Future Meetings

SIXTH ANNUAL ARIZONA CANCER SEMINAR

THE ARIZONA Division of the American Cancer Society, in collaboration with the Arizona Medical Association, will again be host at one of the country's outstanding Cancer Seminars when it meets in Tucson, Arizona, January 25, 26 and 27, 1958, at the Tucson-Bagdad Inn.

Under the chairmanship of Darwin A. Neubauer, M.D. of Tucson and his committee of seven physicians: Arthur A. Present, Hermann S. Rhu, Jr., Ralph Fuller, James Fritz of Tucson and Edward Bregman and James Barger of Phoenix, the faculty for the Seminar has been completed.

The three-day meeting will include lectures by men who top their particular fields in the area of cancer. These specialists are: Dr. Arthur Purdy Scott, pathologist of New York City, Dr. Ross Golden, radiologist of Los Angeles, Dr. Axel Arneson, gynecologist of St. Louis, Dr. Ian MacDonald, surgeon of Los Angeles, Dr. Barrett Brown, plastic surgeon of St. Louis, Dr. Cornelius Lehman, dermatologist of San Antonio, Mr. Dale Trout, physicist of General Electric Co., Milwaukee and the new medical and research director of the American Cancer Society, Dr. Harold S. Diehl.

Their subjects will be reported in a later issue, as well as the names of those who will moderate the sessions. There will be a luncheon and round table discussion on the 25th and the 26th.

It is hoped that more than 500 physicians from Arizona will attend and it will be possible for

everyone to stay at the Tucson Inn for the sessions.

Please enter these dates on your calendar.

EUROPEAN FEDERATION OF INTERNATIONAL COLLEGE OF SURGEONS TO MEET IN VIENNA AND BRUSSELS

TWO MEETINGS of the newly formed European Federation, International College of Surgeons, were announced. One will be held in Vienna, October 18-20, and the other during the World's Fair in Brussels, May 15-18, 1958.

The Vienna Congress will be under the auspices of the Vienna Section, I.C.S., and the direction of Prof. Felix Mandl and Prof. Dr. Leopold Schonbauer, both of the surgical department, University of Vienna. The meeting will bring together the German, Austrian, Dutch, Swiss and other Sections. About 75 papers will be presented. Sessions will be held in Billroth-Haus, Vienna.

Nine surgeons will participate in a symposium on "Surgery of Athletic Injuries," in connection with a special Section on that subject established within the framework of the European Federation.

Scientific themes will include "Diseases of Connective Tissues," "Modern Therapy of Malignancies," "Errors in Diagnosis and Therapy," "Bone Tumors," and "Contrast Visualizations of Internal Organs, Their Value and Dangers."

The entertainment program will include a reception in City Hall by the Mayor of Vienna, his Excellency, Franz Jonas; a visit to the opera,

luncheon and tours. Inquiries about scientific matters should be addressed to Dr. Felix Mandl, Reichsratsstrasse 11, Vienna I.

The Brussels Congress will bring together the Austrian, Belgian, English, Finnish, French, German, Greek, Italian, Dutch, Spanish, Swiss and Turkish Sections of the I.C.S. The meeting will be under the auspices of the Belgian Section and the direction of Prof. John Henri Oltramare of the University of Geneva and director of the European Federation, and Drs. Leopold Lambert, André Sondervost and G. F. Van Keerbergen, president, secretary and vice president, respectively, of the Belgian Section.

Details may be had by writing to the Secretariat, International College of Surgeons, 1516 Lake Shore Drive, Chicago 10, Illinois.

SOUTHWESTERN SURGICAL CONGRESS

THE TENTH annual meeting of the Southwestern Surgical Congress will be held at the *Shamrock Hotel, Houston, Texas*, on the dates of March 31, April 1, and April 2, of 1958.

12th General Assembly — Copenhagen — August 15-20, 1958

IT IS NONE too early to reserve August 15-20, 1958 and plan to attend the 12th General Assembly of The World Medical Association in Copenhagen, Denmark. Special tours will be planned.

PROGRAM ON NORMAL AND ABNORMAL ASPECTS OF THE SKIN TO BE FEATURED AT A.A.A.S. MEETING

THE COMMITTEE on Cosmetics of the American Medical Association in co-sponsorship with the Society for Investigating Dermatology will present a two day symposium entitled "The Human Integument — Normal and Abnormal." This program has been arranged at the invitation of the American Association for the Advancement of Science and will be presented before the Medical Sciences Section at the Association's 124th annual meeting in Indianapolis, Indiana on December 28 and 29, 1957.

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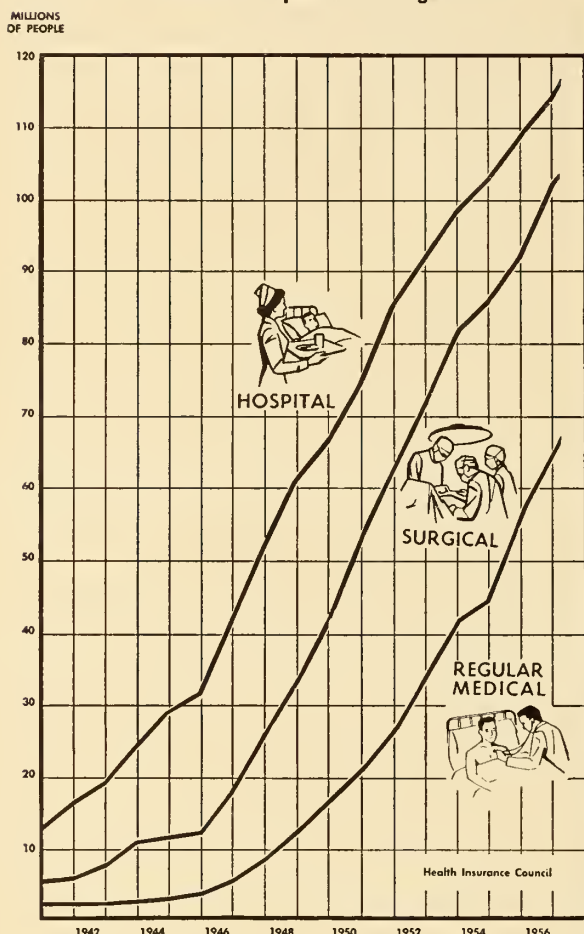


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ARMY ANNOUNCES COURSES FOR "MANAGEMENT OF MASS CASUALTIES"

THE ARMY has announced that courses for the "Management of Mass Casualties" to be conducted during fiscal year 1958 have been scheduled for the following dates: December 2-7, 1957, March 24-29, 1958, and May 12-17, 1958.

The AMA Council on National Defense has been allotted a quota of two representatives for each course. Physicians interested in attending the course should write directly to the Council on National Defense, American Medical Association, 535 N. Dearborn St., Chicago 10, Illinois, advising which course is desired. Since spaces for these courses are limited, requests will be handled on a first come first served basis.

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Broad Social Security Changes Proposed; Doctors Would Be Covered

MORE changes in the much-amended social security law have been proposed in a bill (HR 8883) introduced July 24 by Rep. Robert W. Kean of New Jersey, a Republican member of the House Ways and Means Committee before which the legislation would be heard. The bill is not an administration measure. Mr. Kean claimed that the amendments could be financed without increasing social security tax rates. His explanation: present full employment at higher wages and increased earnings of the social security trust fund. (However, another \$600 of income would be taxed at present rate.)

One of eight major points in his bill calls for the compulsory inclusion of physicians under the system, thereby making them eligible for old age and survivors insurance at age 65 or age 50 if totally and permanently disabled.

Other proposals include: (1) Increase maximum wage base from \$4,200 to \$4,800; under present contributory rates, there would be a \$13.50 a year increase in OASI taxes for earnings of \$4,800 or more, (2) pay benefits to dependents of those receiving disability payments, (3) authorize payments from the trust fund toward rehabilitation of those now receiving disability benefits, (4) increase ultimate benefits for those who continue to work after age 65 by a 1 per cent a year delayed retirement benefit, (5) increase maximum family benefits for widows and dependent children from \$200 to \$296.25 a month, (6) increase widow's benefits from 75 per cent to 80 per cent of the workers' primary insurance amount, and (7) cover tips received as wages.

Mr. Kean said he is "very much in favor" of the coverage of physicians.

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QUACKERY

USE of the mails to promote medical quackery is at the highest level in history, Postmaster General Arthur E. Summerfield said in a statement issued a few days ago.

Based on reports from Chief Inspector David H. Stephens, medical frauds today are more lucrative than any other criminal activity.

"People in all walks of life are paying big money for these frauds," Mr. Summerfield said. He estimated that the medical fraud cases now pending represent an annual loss to the public of \$50 million.

In the past 12 months, 46 fraud orders have been issued in medical fraud cases.

"However," Mr. Summerfield said, "rather than attempt to defend the indefensible, 106 persons or firms signed stipulations agreeing to discontinue their questionable enterprise. These phony schemes altogether were known to be taking in at least \$225,000 a day. Is it any wonder that new frauds spring up every day?"

Medical frauds most common today, in order of popularity, are "dietless" reducing schemes, and "sure cures" for cancer, arthritis, skin trouble, baldness, and "lost manhood." Bust development gimmicks are also on the best-seller lists.

The latest in "cancer cure" devices is supposed to contain "atomic" material.

Mr. Summerfield urged citizens to report suspected mail frauds to the post office department for prompt investigation.

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RECENT PUBLICATIONS

Civil Defense

YOUR attention is invited to the following pertinent items in connection with civil defense:

(a) "Atomic Tests in Nevada," U. S. Atomic Energy Commission, 1957.

(b) "Defense Against Radioactive Fallout on the Farm," U. S. Department of Agriculture, 1957.

(c) "Emergency Medical, Hospital, and Nursing Care," by Harold C. Lueth, M.D., The Annals of the American Academy of Political and Social Science, Vol. 309, January, 1957.

(d) "Survival in Public Shelters," (A paper based on a technical study of hypothetical nuclear attack on the metropolitan area of St. Louis.) Federal Civil Defense Administration, 1957.

(e) "Nursing During Disaster — A Guide for Instructors," Second Edition, National League for Nursing, 1957.

(f) "Civil Defense and Vocational Education," American Vocational Association, Inc., 1010 Vermont Ave., N.W., Washington 5, D. C.

AMERICAN CANCER SOCIETY

THE AMERICAN Cancer Society announced the appointment, effective November 1, 1957, of Dr. Harold S. Diehl, Dean of the College of Medical Sciences, University of Minnesota, as Senior Vice President for Research and Medical Affairs and Deputy Executive Vice President.

The appointment was viewed as an important contribution to a "speeded up" offensive against cancer, according to Dr. David A. Wood, ACS President.

AMA URGES ALL PHYSICIANS TO JOIN U.S. COMMITTEE

THE House of Delegates of the American Medical Association, on June 5, unanimously adopted a resolution urging all members of the AMA to become members of the U. S. Committee of WMA and asking each state society to give special aid to the U. S. committee chairman in its state. Every doctor should be indoctrinated that his basic membership in organized medicine is not complete until he belongs to the United States Committee of The World Medical Association — as well as to his county, state and national medical societies.

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Woman's Auxiliary

SUPPORT CIVIL DEFENSE IT MAY SAVE YOUR FAMILY

By Willa R. Kennedy*

INTRODUCTION

IN REGARD to Civil Defense, the people of this country can be categorized in the following manner:

1. Optimist. He says, "All is for the best. They won't let it happen here."

2. Religious fanatic. He says, "Let God's will be done."

3. Fatalist. He says, "It won't harm me until my number is up."

4. Neurotic. He goes out and commits suicide to keep from being killed.

5. Sensible ones. They try to learn all about the problem so that they may help others as well as themselves.

6. Others. They say, "It is too awful to contemplate so I just won't think about it."

All of us fit into one of these categories. All of us are afraid of dying, at least 99 per cent of the people are and the other one is a liar.

In the field of mass casualties caused by atomic or thermonuclear attack, there are no experts and it must be borne clearly in mind that all who speak or write on this subject base their comments and judgments on analogy with civilian disasters or combat surgery. In this new field, none of us can speak from experience, and it is too easy for false leaders to arise and becloud the issue. In a subject as complicated and serious as that dealing with mass casualties it is especially necessary to define our terms, speak accurately, avoid emotionalism, calm the evangelists, reassure the defeatists, silence the crackpots, stir up interest in the lethargic and do all in our power to arrive at a proper estimate of the probable situation and make adequate, flexible plans on such a basis.(1)

As you know, there are two kinds of bombs, the atomic bomb that is measured in thousands of tons of TNT, and the hydrogen bomb that is measured in millions of tons of TNT. It is

now possible to launch them by intercontinental missile and pinpoint them on any target area in the world.

It was clearly demonstrated in World War II that to defeat an enemy you had to destroy his facilities for waging war. Our air force generals admit that seven out of every 10 enemy planes could easily penetrate our defenses and drop bombs on any target areas they desire. Needless to say, these will not necessarily be military ones. These targets will be hit simultaneously and they estimate, as the result of one attack, we will have between 30 to 50 million casualties.

BOMB PHENOMENA(2)

First you have the blast effects and the shock wave. The shock wave travels with a speed greater than sound. The energy in the shock wave decreases as the distance away from the bursting point increases. When the wave is reflected from any source, such as going up mountains and in valleys, the intensity is increased, but going down the other side of the mountain, it decreases.

Next is the heat. A wide spectrum of electromagnetic radiation is emitted upon detonation. The heat at the center of the bomb is over a million degrees Fahrenheit. Observers feel the heat the instant they see the fire ball.

The nuclear radiation consists of the prompt and the residual. At the instant of detonation, prompt radiation effects are emitted all with characteristic half lives. Residual radiation is the result of many fissions at the time of the explosion. These react with other particles and continue to emit radioactive material. The entire mixture follows a decay pattern inversely proportional to time. For each seven-fold increase in time, there is a 10-fold decrease in radiation. For example, at detonation and a short time afterward, the amount of radiation might be 1000 r per hour. It is estimated that 350 r to 400 r are a lethal dose for human beings.

*Chairman, Woman's Auxiliary Civil Defense Comm.

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Due to the short half life of some of the fission products, their radiation rate drops rapidly. If you were in a well constructed shelter, you would receive only 1/10 of the amount of radiation on the outside and you could safely walk out after two weeks or a month, depending on the size of the bomb, type of burst and climatic conditions.

Our hydrogen bomb that was dropped on the Bikini Atoll was a 25 megaton bomb. It was dropped from an altitude of three miles and was a surface burst. The crater it created was large enough to put five Pentagon buildings into. The entire atoll disappeared. The fallout fell on 64 American soldiers on an adjacent atoll and 200 Marshellese on three other atolls. This was due to a shift in the wind. They did not receive a lethal dose but enough to give them severe radiation burns. All residents on these atolls had to be evacuated. They received from 75 r to 200 r.

Nuclear radiation fallout can mean anything out to a few miles to several hundred or even thousands. It depends on the size of the bomb and the wind direction and velocity. To settle out it may take from 48, to 72 hours, months or even years.

Radiation is always destructive! It cannot be detected by any of the five senses. You can't see, hear, smell, feel or touch it. It can only be detected by some instrument for measuring its intensity or presence. Treatment of radiation casualties will not be based on instrument readings, but only when their symptoms appear.

Thermal radiation is unidirectional in character. It can be roughly compared to the sun only far more intense. Following detonation, injury is sustained in that few seconds 0.3 to 3. Flash burns appear only on the surface of the skin exposed to the radiation source. Anything that will cast a shadow will protect from flash burns. Persons near ground zero will be vaporized or charred as was the lot of many in the Japanese cities.

To give you an idea of the intensity of atomic bombs, here is what happened in the two Japanese cities. The combined populations of Nagasaki and Hiroshima were 500,000. Using two "normal A bombs," or the equivalent of 40,000 tons of TNT, it not only ended the war, but it caused 219,000 casualties. Of the injured, 112,000

died. 90 per cent of all doctors in Hiroshima were casualties. 75 per cent of the students at the Nagasaki Medical College were killed. Out of the 45 hospitals, only three were tenable. No survivors were found out of a military installation of 20,000 men; 138,000 people needed immediate medical attention; 15,000 were listed as missing, probably vaporized or cremated.

This was an unwarned, untrained population for an atomic attack. We have an untrained population and who can say we will have warning?

With respect to major disasters, the people of our nation are oriented outwardly. We tend to look to outsiders for rescue and aid. We must change this to an inward orientation. We cannot expect help from the outside for they will have their own problems. There is no assurance that we are going to have communications or transportation facilities. You will have to carry on in your own area as if no outside help is forthcoming. It will be up to each individual to prepare for his own safety, and the members of their families. This means that every man, woman and child will have to be trained and know what to do for their own protection, and in essence, be their own doctor. No medical help will be available for at least 72 hours.

SURVIVAL AID

Survival aid is mandatory for everyone under the compelling requirements of effective manpower in nuclear warfare which imposes a state of allout war and allout manpower mobilization. This consists of five things:

1. Know how to apply wound dressings.
2. Arrest bleeding.
3. How to handle patients.
4. Different types of artificial respiration and how to maintain patent airways.
5. Emergency splinting.

Treatment of radiation casualties will be purely symptomatic. No specific therapy exists. There may be other injuries in addition to the radiation ones and these would be treated the same way as any other casualty. There is no accurate method so that the doctor will have to judge his treatment according to symptoms.(3) The only protection from radiation is by shielding. A good underground shelter with 18 inches of cement and 3 feet of dirt on top is adequate

protection from radiation and barring a direct hit, it will also protect from the heat, blast and shock wave.

If you live in the metropolitan area where the most likely target area would be, if you have any warning, you should plan to get out. You may not be warned. You must have an alternate plan. A shelter you can get into in three minutes. This should be stocked with food, water, sanitary and medical supplies to last for two weeks or a month. You should have a radio to keep in contact with rescue parties. Due to the lack of public training, if we do get a warning, there is going to be panic. The streets and roads are going to be blocked with old cars and pedestrians. Accidents will occur, cars will run out of gas and the roads will become death traps. You may be going directly to the area where the fallout is intense. There is no accurate method to determine the fallout pattern.

Waste disposal will be an enormous problem. If we pile human waste and people close together we increase tremendously our problems in disease control. Be wise and immunize! The problem of immunization is a great one. Due to lack of refrigeration facilities, vaccines will

not be available. There should be a national law requiring everyone to maintain their immunizations.

SUMMARY

These are only a few of the problems of thermonuclear warfare. Unfortunately, there is no current mechanism whereby any individual or group can exert any pressure to get Civil Defense rolling. If a city doesn't have the urge to prepare, it simply ignores the problem. If anything is to be our undoing, it will be the disinclination to appoint responsible leaders and follow their directions. We must have a pre-planned organization. Such an organization is familiar to the military, but is revolting to civilians who proudly rebel at "regimentation" or interference with their "freedom of action." Without organization they will be free to die and that is about all.(3)

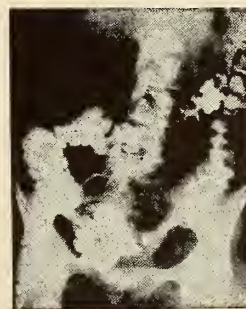
If we preplan for the optimum, perhaps the minimum may be attained.

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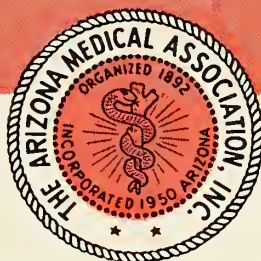
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ARIZONA MEDICINE

Journal of
ARIZONA MEDICAL ASSOCIATION



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The protein of meat—in the proportionate arrangement of its essential amino acids—closely approaches the quantitative proportions needed to promote human tissue synthesis and repair. For this reason lean meat proves important in maintaining positive nitrogen balance without excessive protein intake.

The sodium content of meat prepared without added salt is relatively low. Per 100 grams, beef muscle meat shows approximately 50 mg. of sodium, lamb 90 mg., pork 60 mg., and veal 50 mg.²

The acid ash of meat aids in the promotion of diuresis.

The easy digestibility of meat is a prime requisite of foods specified for the patient with congestive cardiac disease.

In addition to these important features, meat contributes other nutritional factors essential in any convalescence—the B vitamins thiamine, riboflavin, niacin, pantothenic acid, B₆, and B₁₂, and the minerals iron, phosphorus, potassium, and magnesium.

1. Odell, W. M.: Nutrition in Cardiovascular Disease, in Wohl, M. C., and Goodhart, R. S.: Modern Nutrition in Health and Disease, Philadelphia, Lea & Febiger, 1955, p. 699.

2. Bills, C. E.; McDonald, F. G.; Niedermeier, W., and Schwartz, M. C.: Sodium and Potassium in Foods and Waters, J. Am. Dietet. A. 25:304 (Apr.) 1949.

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

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Original Articles

LAS FILOSOFIAS CONTEMPORANEAS SOBRE EL TRATAMIENTO DEL TRAUMA CRANEO-CEREBRAL

By Juan E. Fonseca, M.D.

Tucson, Arizona

Con el advenimiento del automóvil, la protección ósea del cerebro parece ser impotente ante el enorme impacto a que se somete la cabeza en los choques, vuelcos y frenazos que ocurren con creciente frecuencia de acuerdo con la creciente accesibilidad de este vehículo, y, en especial, con el aumento inaudito del caballaje y velocidad que son capaces de desarrollar estos modernos carros. En el año de 1956 murieron 40,000 personas en los Estados Unidos como consecuencias de accidentes automovilísticos, y fueron lesionadas millón y medio.

Son los traumatismos cerebrales de tipo "cerado" los que predominan en el ejercicio de la neurocirugía contemporánea, las heridas "abiertas" o penetrantes constituyendo una pequeña minoría. Es el desgarrar o contusión de la masa encefálica, con su correspondiente hemorragia intracerebral, subaracnoidea y subdural, y la llamada conmoción cerebral, ambos debidos al movimiento de la tal masa dentro de la bóveda

craneana cuya rigidez impide el desempeño de las leyes físicas de la inercia, los que constituyen las principales entidades anatomo-patológicas que resultan de los traumatismos corrientes.

Las fracturas del cráneo, muy conocidas del elemento laico y por los abogados, en realidad no tienen la importancia clínico-quirúrgica de las lesiones traumáticas del cerebro propio.

Para epilogar estos comentario de prefacio, permítaseme anotar que son el juicioso manejo clínico del médico, y el asiduo y diligente cuidado de la enfermera de cabecera, los factores que salvan la vida con más frecuencia que las operaciones dramáticas de decompresión.

Cataloguemos someramente los traumatismos a que nos referimos: En primer lugar la *contusión* cerebral incluye aquellas lesiones relativamente focales representadas por cambios anatómicos con ligera destrucción histológica y algun derrame sanguíneo, y produciendo, en el plano

(English translation on Page 651)

clínico, leves signos neurológicos de carácter focal, no necesariamente acompañados por pérdida de conocimiento.

En segundo término nos referiremos a la *comoción* cerebral, o sea la pérdida temporal del conocimiento, después de un trauma, sin alteraciones anatómicas en la masa encefálica; constituye, pues este fenómeno, una alteración fisiológica y funcional cuya sede y exacto mecanismo se desconocen.

La *rasgadura* del cerebro ocurre en los traumas mayores, aún cuando no hay penetración de la bóveda ósea, como resultado de una ruptura de la corteza cerebral que ocurre espontáneamente por la súbita aceleración y deceleración inherentes al golpe, o también por rebote contra el borde del ala mayor del esfenoides. La *rasgadura* va generalmente acompañada de hemorragia intracerebral e intermeníngea.

Las *hemorragias* traumáticas son generalmente consecuencia de una contusión o *rasgadura*, pero a veces ocurren en formas más puras, limitándose el interior de la masa encefálica, incluyendo el tallo cerebral; o el derrame puede penetrar el sistema ventricular, con pronóstico gravísimo; y, por fin, puede extravasarse en los planos intermeníngeos, como el subpial, el subaracnoideo y el subdural.

La acumulación sanguínea *subdural* merece un nicho especial en nuestra categorización, ya que puede también resultar de un trauma relativamente leve, en que se efectúa la ruptura de una de las venas que cruzan con poco soporte entre la corteza y el seno venoso longitudinal superior, en cuya situación se lleva a cabo un proceso de encapsulamiento del coágulo que gradualmente se desintegra y hemoliza en un líquido hipertónico hiperproteínico que, por ósmosis, tiende a aumentar de volumen mientras que la cápsula se engruesa, produciendo así, a la postre, fenómenos de presión cerebral progresivos, con características focales, que exigen evacuación quirúrgica.

El *higroma* subdural comprime como el hematoma, y es una creciente acumulación de líquido

céfalo-raquídeo que se derrama por un pequeño desgarro de la aracnoide.

Los hematomas *epidurales*, más raros, implican, por lo general, una fractura de cráneo que interesa uno de los troncos arteriales de la circulación dural, que, una vez rotos, disecan, por la presión hemorrágica, la dura de la tabla interna de la bóveda craneana hasta producir, con suma rapidez, un hematoma compresor del cerebro que quede producir la muerte en pocas horas.

Las *fracturas* de cráneo son, por lo general, lineales cuando el golpe es difuso. Las que son deprimidas son, en su mayor parte, compuestas, y resultan de la penetración o impacto momentáneo de un cuerpo comparativamente agudo.

El *edema* del tejido del neuro-eje inspira respeto al más optimista de los estudiantes del sistema nervioso; y es, como es natural, una secuela del traumatismo, más bien que un resultado directo del golpe.

Las heridas *penetrantes* del cerebro implican fractura compuesta del cráneo, con entrada transdural, y son producidas, por lo general, por proyectil, metralla, u objetos agudos.

En cuanto a las manifestaciones clínicas de las lesiones arriba mencionadas, deben subdividirse los cuadros en operables y no-operables.

Son *operables*, por lo usual, aquellos traumatismos "abiertos" en que haya que llevar a cabo una debridación de cuerpos extraños, fragmentos óseos o tejidos necrotizados, antes de suturar los planos anatómicos de dura, gálea y piel. También son operables aquellos cuadros en que existen señales de que la presión intracranial aumenta gradualmente y las funciones vitales del enfermo deterioran.

En cuanto a los *no-operables*, debe percatarse a groso modo, el facultativo en su primer contacto con el lesionado, del estado de las funciones vitales. Me refiero, naturalmente, al grado en que responde el enfermo a los estímulos dolorosos, como la presión sobre el nervio supraorbitario, los pellizcos, pinchazos, etc. Huelga men-

cionar, desde luego, que todo tipo de observación atañe también a los casos considerados operables. Establecen, pues, estas anotaciones sobre el enfermo, una base de comparación para estimar cambios posteriores en el nivel de conciencia y profundidad del coma. Debe notarse también si el enfermo, al responder a estímulos dolorosos, muestra una hemiplejía o si, por el contrario, mueve igualmente todas las extremidades.

En segundo lugar, debe anotarse la presión arterial y el pulso. En caso de shock, el uso de hipertensores por goteo endovenoso, como el levofed, puede que sea necesario, aunque el colapso vascular periférico es rara complicación en estos casos.

La preservación de la integridad de las vías aéreas, que permita la oxigenación adecuada del cerebro, es uno de los cuidados que requieren más constante atención y que con mayor frecuencia se ignoran o menoscaban. El médico o enfermera que ignora el estridente ronquido o el burbujeo traqueal o naso-faríngeo de sangre o secreciones aspiradas, o la taquipnea y la cianosis del comatoso que se asfixia por obstrucción mecánica de las vías respiratorias, no merece ni mi respeto ni la gratitud del lesionado. Debe haber, a mano, una bomba de succión utilizando un simple cateter de hule con la apertura en el extremo. Una broncoscopia de aspiración pudiera ser necesaria. A veces el simple uso de la succión frecuente por las vías nasal y bucal es suficiente, en conjunción con un abatelengua semirígido. A veces la intubación endotraqueal o la traqueotomía, que hacemos con relativa frecuencia en los lesionados cerebrales, son responsables de muchas vidas salvadas.

Observaciones de carácter más específicamente neurológico deben hacerse, después de haber determinado si hay algún otro traumatismo, como fractura-dislocation del cuello, de la columna toraco-lumbar, de las extremidades, ruptura de vísceras abdominales, etc. Me refiero, en especial, a la reacción pupilar, a la presencia de reflejos patológicos como el Babinski, etc. A discreción del médico una *punción lumbar*, si el enfermo no está extremadamente inquieto, puede arrojar datos de interés, como la presión del

líquido, la cual es fácil de medir con el manómetro de agua, y el grado de hemorragia, ambos de los cuales pueden redeterminarse posteriormente para seguir la evolución del caso.

Aunque útil para excluir fracturas deprimidas que deban operarse, o fracturas que interesen la arteria meníngea media que deban ponernos en guardia contra los estragos de la hemorragia epidural, o desviaciones de la glándula pineal calcificada, la *radiografía de cráneo* puede posponerse hasta que la condición del lesionado se estabilice o su inquietud lo haga más fácil de manejar.

Una vez encamado, el comatoso, si es del todo posible, merece la atención constante de una enfermera especial que cuide de mantener intactas las vías respiratorias, que siga el curso del pulso y de la presión, y que administre los sedantes para la inquietud evitando que el enfermo se lastime. La *inquietud*, producto de la hipoxia cerebral, constituye un reto a la paciencia e ingenuidad del médico. Usamos nosotros el fenobarbital, el paraldehído, el cloral; últimamente nos inclinamos a los derivados de la rauwolfia y de la promazina.

Los *líquidos* no deben restringirse excepto en raros casos en que parezca que el edema juega papel importante. De otro modo de 2,000 a 3,000 mililitros deben administrarse a diario por la vía endovenosa, incluyendo 1,000 mililitros de suero salino, y el resto en suero glucosado o hidrolizados de proteína cada 24 horas. Si el enfermo no recobra el conocimiento o es capaz de ingerir sus propios líquidos, se le intuba el estomago por la vía nasal con una sonda de polietileno fina, que se deja in situ indefinidamente, y se le administra por la misma, una dieta líquida de 2,000 a 3,000 mililitros con un valor calórico de 1,000 a 2,000 calorías. La *incontinencia urinaria* se controla con un cateter permanente que se cambia semanalmente.

La *fiebre* es otro problema que requiere frecuente atención, ya que la hiperpirexia de origen cerebral puede llegar con suma rapidez a niveles elevadísimo que son incompatibles con la vida. El tratamiento, por medios físicos, de este trastorno del centro termo-regulador del cerebro, es

el más racional, y consiste en exponer las superficies cutáneas a la atmósfera ambiente destapando al enfermo; las aplicaciones de toallas enchumbadas en alcohol o de sábanas humedecidas en agua helada, son eficaces; la aspirina, por la vía oral o rectal, es también empleada.

Aunque el 75% de los casos de coma por trauma cerebral sobreviven sin necesidad de operación, los hematomas e higromas subdurales, y los hematomas epidurales necesitan evacuación quirúrgica. Se indica la *trepanación*, repito, cuando el cuadro deteriora con el enfermo respondiendo paulatinamente menos vigorosamente a los estímulos, la presión ascendiendo, el pulso alentándose, etc. Trepanaciones bitemporales son las más corrientes, y se hallan la mayoría de los hematomas e higromas por esta vía. Siempre deben hacerse en ambos lados en el caso de los *subdurales*. Se hacen también si el lesionado se estaciona en su progreso de manera inexplicable. Se practica también la trepanación temporal cuando se sospecha hemorragia *epidural*. En estos casos la evolución de los síntomas localizantes es rápida, y hay una fractura lineal hacia la base de la fosa temporal; la pupila homolateral generalmente se dilata, y hay una hemiplejía contralateral; se palpa también una tumefacción de la región temporal homolateral en el músculo

temporal, y el individuo progresa rápidamente hacia un coma profundo. Con tal cuadro, la trepanación sin demora es mandatoria: al atravesar la tabla interna se ve el hematoma; se ensancha el agujero con rongeurs rápidamente, y se aspira el coágulo hasta encontrar el origen de la hemorragia. Enconces se aplica un clip de plata o se cauteriza la meníngea media.

La convalecencia y rehabilitación de estos enfermos es excepcionalmente satisfactoria y completa salvo cuando hay motivación de ganancia por litigio legal, o en individuos de avanzada edad. Recientemente se viene recomendando la ambulación precoz y la rehabilitación rápida, en contraste con el prolongado reposo de cama y limitación de actividad que, con frecuencia, da lugar a una invalidez psicosomática.

Para concluir, quiero de nuevo poner de relieve la importancia del manejo juicioso, alerta y diligente del lesionado, en los planos que enumeré, más bien que en los procesos operatorios que, por lo general, son útiles solamente en manos de aquellos facultativos que poseen experiencia especial en esas técnicas.

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CURRENT THINKING ON THE MANAGEMENT OF CRANIOCEREBRAL TRAUMA*

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WITH the advent of the automobile, the bony protection of the brain seems inadequate against the terrific impact to which the head is apt to be subjected in a collision. The situation has become aggravated by the increasing accessibility of the automotive vehicle, as well as by the increased prevalent speed and horsepower of present day car production. In 1956 upward of 40,000 Americans lost their lives in this manner, and a total of 1½ million were injured.

It is the "closed" head injury that constitutes the great majority of the tally, "open" and "penetrating" lesions occurring less frequently. It is the laceration, or contusion, of the brain with its accompanying intracerebral, subarachnoid and subdural hemorrhage, and the so-called "concussion," which represent the leading mechanism in the closed head injury. It is partly a by-product of the violent acceleration and deceleration of the semi-fluid brain against the rigid walls of the cranial vault.

The skull fracture, per se, is an entity well known to the lay folks and to the attorney who dabbles in personal injury litigation; but as such, it has much less significance than the extent of the brain damage proper.

To close these prefatory remarks, I wish to note that the diligent, judicious and assiduous management by the attending physician, together with alert nursing care, are more responsible for saving lives than any dramatic decompressive operation.

Let us briefly catalog the various types of trauma that we are here to discuss:

In the first place, the cerebral *contusion* represents a fairly focal lesion with its corresponding focal clinical signs, incident to "bruising" of the brain, and not necessarily associated with loss of consciousness.

Cerebral *concussion* in its pure form, implies a temporary loss of consciousness attributable to a physiological derangement of brain function lacking a demonstrable anatomical counterpart.

Lacerations of the brain follow major trauma, even in closed injuries, and represent a spontaneous tear from the impact, or from striking the edge of the greater wing of the sphenoid. They produce intracerebral or subarachnoid hemorrhage.

Hemorrhages can also occur from a contusion or from a true rupture of a vessel on the surface or inside the brain, thus producing intermeningeal (subpial, subarachnoid or subdural) or pure intracerebral hemorrhage respectively. Bleeding into a ventricle carries a grave prognosis.

The well known *subdural hematoma* deserves a special niche in this outline because of its surgical implications and because it may follow a trivial injury. Although it can follow a brain laceration, it is said to be often due to a tear in bridging cortical veins which drain into the superior longitudinal sinus. This subdural accumulation of blood coagulates and develops a capsule. Through hemolysis and osmosis its volume tends to increase gradually even as the active hemorrhage had long before ceased, and the capsule organizes and thickens, holding a progressively larger volume of dark yellow fluid with a high protein content, which will produce increasing focal signs of intracranial hypertension requiring surgical evacuation.

The subdural *hygroma* evolves from an arachnoidal tear that allows unidirectional spillage of CSF from the subarachnoid to the subdural compartments, creating, again, a pressure situation calling for surgical relief much as the hematoma.

The *epidural hematoma* is rare and ordinarily follows a skull fracture across the more proximal portion of the middle meningeal artery, which it tears, producing a rapidly progressive hematoma which dissects the dura from the skull and eventuates in acute cerebral compression which can kill in a few hours.

Fractures of the skull are generally linear if the blow is diffuse. The depressed ones usually are compound and are due to the impact of a hard object with a small or sharp surface.

Edema of the brain is a common indirect result

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of brain injury which has always inspired respect and fear among the students of the nervous system.

Penetrating wounds of the brain naturally presuppose a compound fracture of the cranium, with transdural trespassing, and are ordinarily produced by missiles, sharp objects, etc.

Concerning the clinical manifestations of the above captioned types of head injury, these should be subdivided as operable and non-operable.

Among the *operable* or truly surgical, the open wounds head the list, and the time tested principles of debridement and closure in layers obtain when the wound is not too old or grossly infected. Also operable are those injuries where there are progressive signs of increased intracranial pressure, especially if associated with focal characteristics and deterioration of vital signs.

In the management of the *medically manageable* cases, a careful appraisal of the vital signs and neurologic status is as important as in the surgical, which they can develop into. I refer, in particular, to the degree of responsiveness to painful stimuli, such as supraorbital pressure, pinching and sticking with a pin. A record of such responsiveness serves as a basis for comparison with later observations which allows for more accurate following of the evolution of the clinical picture. In testing with painful stimuli one must watch for evidence of hemiplegia if the coma is not too deep. Pulse, BP, temperature and respiratory rate should also be recorded at frequent intervals. Although peripheral vascular collapse is rare, occasionally the use of sympathomimetic drugs by intravenous drip becomes necessary.

It is the preservation of an *adequate airway*, however, that is most often overlooked and underestimated. The surgeon or nurse must be alerted to the tracheo-laryngeal gurgling of the blood and secretions. Some type of suction apparatus should be available, and is best used with a soft rubber catheter with an opening at the end, which is introduced transnasally or orally. A bronchoscopy is occasionally necessary. Often the diligent use of the suction and a semirigid rubber airway suffice to maintain the airway free. Endotracheal intubation is used as an

emergency and temporary measure and is tolerated only when the coma is deep. More often the surgeon resorts to tracheotomy, which greatly simplifies the task of aspiration and is life saving.

After ruling out other associated injuries and evaluating the vital signs as mentioned, other, more *strictly neurological* spheres should be explored: pupillary reaction and size, pathological reflexes, cranial nerve signs, etc. The indications for *lumbar puncture* remain somewhat controversial. If not made cumbersome by the patient's restlessness, it has much to commend it primarily because it gives a fairly accurate estimate of intracranial pressure and the extent of bleeding when the simple water manometer is employed.

The importance of *skull radiographs* at the time of the initial examination is again a controversial subject. They may be valuable if not contraindicated by extreme restlessness or a very precarious situation: a fracture that threatens the middle meningeal artery in the floor of the middle fossa may be disclosed thus alerting us to a rapidly developing epidural hemorrhage; depressed fractures with surgical implications are also ruled out, as are deviations of the pineal gland (when calcified) which bear tidings of a space-occupying lesion or cerebral displacement.

Once in the ward, if at all feasible, the unconscious patient deserves the around-the-clock attention of a *special nurse* to maintain a watch on airway, pulse, respirations, blood pressure, etc., and to administer whatever tranquilizers or other medicaments that may be ordered as necessary. *Restlessness*, in particular, can assume proportions such as to constitute a challenge to the patience of the nurse and pharmacological resourcefulness of the attending doctor. Phenobarbital, paraldehyde, chloral, and, more recently the rauwolfia and promazine compounds are used.

Restriction of *fluid intake* seldom plays a role in the management of head injuries except when edema is suspected of acting as a major factor. Otherwise a generous allotment of 2,000 to 3,000 cc of intravenous fluids is administered every 24 hours, including 1,000 of normal saline. If unconsciousness or inability to swallow the recommended complement persists beyond the first two or three days, fluids and nourishment

are administered via an indwelling, thin, polyethylene gavage tube, infrequently dripping portions of a thin liquid diet rated at 1,000 to 2,000 calories daily. Urinary incontinence is best handled by an indwelling, small Foley catheter.

Intractable hyperpyrexia of central origin is another problem requiring assiduous attention. The physical approach in controlling this derangement of the thermo-regulatory centers of the brain, is more rational than the pharmacological, and is based on the principle of giving the subject every chance to dissipate his body heat by exposing the body surface to the room atmosphere, by the use of directly applied cooling devices such as alcohol sponges, sheets soaked in ice-cold water, cold water enemas, as well as rectal aspirin.

Although most serious head injuries run their course without need of surgical intervention, the subdural hematomas and hygromas, and the epidural hemorrhages do make *trephination mandatory*. Steady gradual deterioration in vital signs, increase in focal manifestations, prolonged failure to improve, persistently elevated spinal fluid pressure, bradycardia, hypertension, all join to coax the alert surgeon into exploratory burr holes. These ordinarily are placed in the temporal area, and usually bilaterally in the case of subdural hematomas.

Epidural bleeding is suspected when there is rapid progression of localizing signs, such as

homolateral dilated pupil, swelling of the temple and contralateral hemiplegia with deeping stupor, especially if this occurs in conjunction with a homolateral linear fracture running into the floor of the middle fossa. Rapid preparations should be made to expose the epidural space through a quickly enlarged temporal burr hole and a bleeding dural artery can be isolated and silver-clipped or cauterized.

The convalescence and rehabilitation of the head-injured is usually smooth and complete considering the severity of the alteration of brain function that occurred. Pending litigation, a neurotic personality and advanced age are operative in delaying a course of otherwise uneventful recovery, however. The recent tendency to advocate an earlier ambulation and assumption of activity with return to a useful role in life is based on sound principles, and contrasts with the time-honored period of enforced absolute bed rest for the most trivial head injuries, which together with an alarmist and overprotective supervision, often bred much psychosomatic invalidism.

In closing, I should like to be allowed, again, to emphasize the importance of alert, judicious and diligent medical management of head injuries, without detracting from the merits of surgical procedures, which when indicated, can also be life-saving, although best left in the hands of those with the special skills in the field.

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RHINOLALIAS

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RHINOLALIAS constitute disturbances of both voice quality and production of the sounds of speech. While each may evidence variations, the two major types of this speech disorder are rhinolalia aperta and rhinolalia clausa. Rhinolalia clausa, also referred to as negative nasality, is characterized by the absence of nasal resonance as required for normal American speech. The result is a "stuffy nose" voice quality and failure in the production of the nasal consonants, "m, n, ng." The latter are the only sounds of our speech properly nasalized and their production requires unobstructed passage of the voice stream posteriorly into the nasal cavity and out via the nares. The most common causes for rhinolalia clausa are nasal polyps, deviated nasal septum, hypertrophied adenoids and nasal congestion due to colds, allergies and any other of the conditions resulting in nasal stenosis.

Rhinolalia aperta, also referred to as positive nasality and by far the most serious of the rhinolalias, is characterized by an unpleasant nasal voice quality and varying degrees of failure in the production of all sounds of speech except "m, n, ng." (Articulation of even these is defective in many severe cases.) The characteristics of rhinolalia aperta arise from an undesired nasal escape of the breath and voice streams of speech. Normal production of the non-nasal sounds of American speech requires that the streams be directed into the mouth and out via the lips. Moreover, all such sounds except the vowels and semi-vowels require considerable oral pressure since they are produced with hissing, explosion and other pressure actions. And in order to pressurize the oral cavity for these actions, measures must be taken to prevent posterior escapes of the speech streams into the nasal cavity. Structures which prevent this escape are the velum and adjacent portion of the pharyngeal wall, making up what is referred to as the nasal port. In normal production of the nasals, "m, n, ng," this port is open, while in production of all other sounds it is closed by the levator action of the velum and the constrictor action of the pharyngeal wall.

Possible causes for rhinolalia aperta are paralysis of the velum and/or the pharyngeal wall, cleft palate, cleft velum, atrophy of the posterior palatine or of the pharyngeal nerves, post-adenoidal conditions, low energy level which renders the individual incapable of the vigor required for velo-pharyngeal closure, foreign or regional dialect, and congenitally widely separated velum and pharyngeal wall. Commonly active, too, is residual cleft palate or velum in which the velum is too short for its function in velo-pharyngeal closure or in which the defective speech patterns previously established persist as a now purely functional disorder.

Post-adenoidal rhinolalia aperta merits special discussion. There are two degrees of this type of positive nasality: (1) the relatively mild and temporary condition which usually follows a T and A and which is due to the post-traumatic state of the velo-pharyngeal structures, and (2) the more serious type which requires speech therapy, and possibly surgery, for correction. The more serious type originates as rhinolalia clausa due to complete nasal stenosis induced by hypertrophied adenoids. During such a severe stenosis, velo-pharyngeal closure of the nasal port ceases because obviously it is no longer necessary. If such a deactivation continues long, it is lost as a speech function and continues so even after adenoidectomy, with the result that the voice and breath streams of speech now flow unimpeded into and out of the nasal cavity. The speech picture of such a condition is comparable with that of unrepaired oral clefts, velar paralysis or any other of the causes cited as possible etiological factors in severe rhinolalia aperta.

Methods, as well as success, in correcting rhinolalias depend upon cause, age of the individual, his speech "sense," general intelligence and his motivation in the therapeutic procedure. Correction of the clausa type usually can be accomplished by successful medical or surgical treatment of the stenosis. Exceptions are those cases which possibly may result in conditions similar to that of post-adenoidal rhinolalia aperta.

Rhinolalia apertas pose a more difficult problem. In velar paralysis such as that suffered by the cerebral palsied child or the older victim of apoplexy, often only limited improvement may be achieved even with extended periods of speech therapy. Those cases due to low energy level will yield little until factors of health have been treated and those caused by widely separated velum and pharyngeal wall or severe postadenoidal conditions may not yield without surgery of a nature to be discussed later. On the other hand, the relatively mild apertas due to regional prevalence, foreign dialect or others of imitative origin may yield quite readily to speech therapy.

The most common, as well as the most serious, types of rhinolalia aperta are those of the congenital cleft palate and velum (combined or separate, the patient is commonly referred to as a cleft palate). These usually are accompanied by aesthetic, and therefore psychological, as well as physical complications in addition to oral clefts. These include clefts of maxilla and upper lip, causing articulatory difficulty with specific sounds of speech, clefts of nares, missing or deformed pinnae, absence of apertures into the external auditory meatus and, even in normal external auditory structures, marked hearing loss.

As is the case in many speech disorders, the speech pathologist must work in close conjunction with the physician in treating oral cleft rhinolalias. Though there are occasional reasons for exception, speech therapy ideally is begun only after closure of all clefts. If surgery has rendered oral structures adequate for normal speech, achievement of normalcy is a possibility with varying lengths of speech therapy. Relative statistics are unavailable, but the unfortunate fact is that many cleft palates must undergo speech therapy regardless of the degree of success of surgery. While rhino- and labioplasty may be completed during the few weeks of life, palato- and veloplasty generally are deferred until the 18th month. Such a pattern has been established because oral tissue is more amenable to surgery at this time and because the rate of mortality is considerably higher at earlier ages.

As early as 18 months may seem, it is late so far as speech is concerned. Many children of this age have developed a great deal of (defective) speech, and despite lack of audible

evidence others have nevertheless undergone certain developmental stages in the form of neurograms and muscular patterns. Any alalic will have undergone such development by 18 months, but in the cleft palate these neurograms and muscular patterns have been suited to the defective structures existent prior to surgery. Following successful surgery it is said usually that oral structures are now adequate for normal speech. The more accurate statement, however, is that they are potentially adequate, for actual achievement may depend upon long periods, often years, in which the speech therapist must tear out by the roots all defective, reflexive speech patterns and insert normal ones in their place.

The cleft palate faces another problem. Though plastic surgery has closed all clefts, it has been pointed out earlier that the velum may be unable to function in velo-pharyngeal closure because of insufficient length or because of neural or muscular atrophy. Only a few years ago these patients had to be content with only moderate improvement even after considerable speech therapy. Speech normalcy was in fact never achieved. Recently, however, a surgical procedure has been developed to meet the need of the inadequate velum. This surgery, called a pharyngeal flap procedure, makes speech normalcy possible for every patient whose clefts have been closed. In this procedure the plastic surgeon fashions a tissue flap on the pharyngeal wall and brings it forward to be sutured to a prepared portion of the velum. Variations of the procedure are the superior, in which the flap is sutured to the oral portion of the velum, and the inferior in which it is sutured to the nasal portion. In either case the result is a nasal port composed of two lateral apertures separated by the newly formed flap. Closure of the port is now achieved by constriction of the pharyngeal wall against the flap. The apertures are sufficient for nasal drainage and, by testimony of two adults and a 14-year-old, the change in oral structure poses no discomfort. In six such cases rendered speech therapy by the writer, four experienced sudden, spontaneous and dramatic speech improvement, one is slowly but consistently making progress of which he was totally incapable prior to surgery and the sixth evidenced no spontaneous improvement and has as yet undergone insufficient therapy to determine the ultimate outcome. This

surgical procedure may be applied also in cases of widely separated velum and pharyngeal wall and in severe post-adenoidal rhinolalia aperta. Surgery for the latter condition is presently pending for two cases, the only ones of this type of disorder which in the writer's experience have failed to respond to therapy. How universally the pharyngeal flap procedure is used is unknown. It is eventually certain, however, to replace the velar obturator, which incidentally the writer has never recommended nor seen used successfully. The only such oral prosthetics he has seen used successfully were those fitted into apertures remaining in the bony palate.

Candidates for the pharyngeal flap procedure fall into three classifications: (1) those who at first examination definitely can be said to require it, (2) those who as readily can be said not to and, (3) those questionable cases which require a trial period of speech therapy before the need can be determined. Final decision for the procedure is a joint function of the plastic surgeon and the speech pathologist. Appearance of the velum can be confusing to one newly introduced to this problem. A velum which has normal appearance may be totally inadequate from a functional standpoint, while one which is alarmingly short and misshapen may have completely normal mobility and function. Clues which determine wisdom of the procedure are (1) the patient's ability to perform successfully particularly suited blowing exercises, (2) his ability to produce the isolated sounds of speech and (3) the mobility of his velum in mechanically induced gag reflex. Successful performance of any one of these renders the pharyngeal flap procedure unnecessary. The decision in favor of this last resort procedure is to be taken no more lightly than other types of surgery, but only after carefully weighing the possibilities of normal speech achievement without it. The only reason for the step in case of doubt is that the patient lives in an area where speech therapy is unavailable and there is strong possibility that surgery alone will enable him to achieve spontaneous improvement.

Correction of any severe aperta is difficult. One of the most difficult problems faced by the speech therapist, however, is correction of

those arising from cleft palate or velum. These cases are not candidates for group therapy and a great deal of experience is necessary in the therapist if he is to achieve correction even in private therapy. In simplest terms, the problems faced are activating the nasal port, of whose function and existence the patient is wholly unaware, and securing reflexive speech movement of all oral structures previously used defectively or not at all in the speech process. In the writer's experience development of normal speech in such cases has required from 18 to 30 months, depending upon the degree of failure involved. Speech therapy for the repaired cleft palate may begin as early as two and one-half years and should not be delayed beyond age three. In rhinolalias as well as other speech disorders, the longer therapy is delayed the more entrenched defective habits become and the longer, more difficult and expensive the therapeutic procedure.

SUMMARY. Rhinolalias are combined disturbances of quality of voice and production of the sounds of speech. Major types of these disorders are rhinolalia aperta and rhinolalia clausa. Symptoms of the latter are a "stuffy nose" voice quality and, in severe cases, absence of the nasal consonants, "m, n, ng." Causes of these symptoms are nasal stenoses which prevent nasal escape of voice as required for American speech. Rhinolalia clausas usually can be corrected by medical or surgical treatment of the stenoses.

Symptoms of rhinolalia apertas are a nasal voice quality and varying degrees of failure in production of all sounds of speech except "m, n, ng." Causes of these symptoms are oral paralysis, cleft palate, post-adenoidal conditions and other disorders which prevent velo-pharyngeal closure and consequent nasal escape of all speech efforts. Steps in correcting rhinolalia apertas may include velo- and pharyngo-plasty, speech therapy and possibly pharyngeal flap surgery, a recently developed, last resort surgical procedure for cases in which the velum is inadequate despite previous surgery.

Most rhinolalias can achieve normal speech if services of the physician, the plastic surgeon and the speech therapist are sought early.

FROZEN SECTIONS

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ONE USE of the frozen section will be mentioned very briefly. This indication is the occasional need for one of the relatively few special stain preparations which cannot be secured if the tissue has been dehydrated and blocked in paraffin. The other indication is a situation which may (or may not) be found to exist when a fresh surgical tissue is presented with the question: Are we dealing with cancer? There has been, and still is, much disagreement regarding the use of the quick frozen section in such circumstances. At the one extreme, it has been maintained by such workers as McCarty, McDonald and Culp, and Dockerty, that properly prepared frozen sections are as reliable as permanent paraffin sections. At the other extreme, such individuals as Ewing, Warthin, Simpson and Breuer have been extremely dubious regarding their usefulness. The role played by Bloodgood in this connection is particularly interesting. For quite a long time, Bloodgood highly recommended the frozen-section-at-operation; however, finally, this individual completely reversed his attitude and recommended — if the lesion could not be readily (grossly) identified as cancer — that the wound be closed and that nothing more be done until a positive diagnosis became available following careful study of routine sections. At the present time, the vast majority of practicing pathologists believe that the quick frozen section does serve a useful function, but that the limitations of the frozen section method need to be fully appreciated. Even in the most expert hands, the tissue being subjected to adequately prolonged preliminary fixation with formalin, the frozen section is not consistently equal in quality to the routine paraffin section. The difference in quality is such as to make mandatory this rule: *If the gross "picture" is not such as to suggest very strongly that the lesion is cancer, do not permit the findings with quick frozen section to modify the initial impression that the lesion is benign.* Exactly the opposite rule holds with the routine paraffin section. With the par-

affin section, the lesion which appears grossly benign can safely be reported malignant, the revised opinion being based purely upon the histologic findings. Another limitation as regards the frozen section technique is the fact that certain tissues are processed rather readily, whereas others are not. There are case exceptions: more often than not, however, the frozen section provides no useful information if we are dealing with one of the malignant lymphomas. Papillary neoplasms are not readily typed by means of frozen section. All tissues (and lesions) which are grossly friable, mucinous or hemorrhagic fall into much the same category. The method is rarely useful if the lesion is of non-invasive (in-situ) type.

At the present time, in this hospital, tissues delivered to the pathologist during the course of a surgical operation are ordinarily handled in one of two ways. If the surgeon has asked simply for "diagnostic study" or for "consultation," the question being one of cancer, the pathologist has considerable choice as regards method or methods of analysis. If gross examination reveals no sign of cancer, this is immediately reported; considerable time is saved. If gross dissection of the specimen reveals a lesion which appears as cancer, recourse may be had to frozen sections, or (if the lesion is extremely soft and friable) to so-called "contact smears." "Contact smears" are occasionally, in selected cases, much more useful than frozen sections. A different situation evolves if the specimen is delivered to the pathologist with the specific direction: "Make a frozen section." It is appreciated that the specific demand for frozen section is sometimes a direct reflection of instructions given the surgeon by the patient. The patient who insists on directing his or her program of diagnosis and therapy is, — of course unintentionally, — severely handicapping the physician (or physicians) who might otherwise be able to exercise judgment predicated on findings. In such a situation, when there is no option, if dissection of the specimen reveals no lesion which appears as a focus of probable malignant neoplastic change, it is necessary quite haphazardly

to select a block of tissue from which to cut frozen sections; the "picture" presented by such a section has to be staunchly ignored; if the lesion "looks like" cancer, it is probably sclerosing adenosis. The "frozen commitment" has one possible advantage; it unquestionably increases the number of cases subjected to frozen section and helps the pathologist to keep in practice. On the other hand, however, it intensifies the one great hazard encountered by those who use the frozen section method; this hazard is the persistent temptation to attach too much significance to the frozen section "picture." At a seminar held this last October (1956) in Chicago, following mention of an extremely rare lesion, adenocarcinoma arising in fibroadenoma of breast, and a suggestion that this finding might encourage the pathologist more frequently to subject lesions which appear as fibroadenomas to quick frozen analysis, one of the most reputable pathologists in the country had this to say: "I think that it is still good policy not to do a frozen section on the garden variety of fibroadenoma." No opinion to the contrary was expressed. In one of the newest textbooks of pathology, one of the best such tomes presently available, Dr. Lauren V. Ackerman has this to say about quick frozen sections: "In cancer, there are only three possible diagnoses, positive for cancer, negative for cancer, or no diagnosis made." In practice, the quick diagnosis "positive for cancer" means ordinarily that the tissue contained a lesion obviously grossly cancer and that this diagnosis has been confirmed by study of a frozen section. On the contrary, the diagnosis "negative for cancer" means simply that cancer could not be identified with the naked eye, or with frozen section — one or more haphazardly selected blocks of tissue being examined. The immediate "negative for cancer" report provides no assurance that exhaustive follow-up study of a series of routine paraffin sections will not reveal the presence of occult cancer.

During a recent period of 18 months, 398 surgical tissues were subjected in the laboratory of this hospital to immediate diagnostic study. A recently published analysis by Jennings and Landers tabulates the results of analysis of 412 surgical tissues during a period of 18 months. During a period of 30 months, 620 surgical tissues submitted for immediate diagnostic study were processed in the laboratory of this hospital.

In the Jennings and Landers series, 212 of the examinations were breast biopsies; in this series (collected during 30 months) 406 of the examinations were breast biopsies. In 384 instances (94.5 per cent), a definite diagnoses of cancer was rendered in 68 instances and it was reported in 316 instances that no evidence of cancer was detected. In 22 instances (5.4 per cent) the nature of the lesion was doubtful and the surgeon was advised to await the permanent sections. In two cases (0.49 per cent) occult carcinoma (the lesions not being grossly detectable) was discovered as routine paraffin sections were studied. These percentages check very closely with those reported by Jennings and Landers; no other similar analysis is found in the current literature.

It is a well known fact that the thyroid gland rather commonly presents lesions of such a nature that the differentiation of benign from malignant processes is difficult when one is given an opportunity to make a time-consuming study of technically excellent routine paraffin sections. For this reason, the average pathologist attempts a frozen section of thyroid gland with considerable reluctance. In at least one of the medical school affiliated departments of surgical pathology, no attempt is made to cope with lesions of the thyroid gland employing the frozen section technique. In the present series, an examination of this type was requested and carried out in the instance of 36 tissues. The results (Table II) were good in that all immediate definite reports were confirmed; however, the fact that results were doubtful in 33.3 per cent of instances supports the concept that the method is not very satisfying when the tissue is thyroid gland.

The remaining 178 tissues (see Table III) were, with few exceptions, submitted with a requisition for "frozen section," the pathologist being given no option as regards diagnostic methods to be employed. There was, in this group, some concentration of tissues not suitable for frozen section analysis. As might be anticipated, there was a fairly high incidence (15.7 per cent) of doubtful results. However, occult cancer was found only once (0.57 per cent). These tissues were quite various in origin and included material identified as uterine scrapings, uterine cervix, body of uterus, ovary, testis, epididymis, urinary bladder, lymph node, skin, subcutaneous tissue, axillary tumor, re-

TABLE I – BREAST CANCER? 460 tissues

| | Yes | | No | | Don't know | |
|--------------------------|-----|----|-----|-----|------------|----|
| Frozen section diagnosis | 68 | | 316 | | 22** | |
| Final diagnosis | Yes | No | Yes | No | Yes | No |
| | 68 | 0 | 2* | 314 | 12 | 10 |

*0.4% **5.4%

TABLE II – THYROID CANCER? 36 tissues

| | Yes | | No | | Don't know | |
|--------------------------|-----|----|-----|----|------------|----|
| Frozen section diagnosis | 3 | | 0 | | 12 | |
| Final diagnosis | Yes | No | Yes | No | Yes | No |
| | 3 | 0 | 0 | 21 | 1 | 11 |

TABLE III – CANCER? Miscellaneous group – 178 tissues

| | Yes | | No | | Don't know | |
|--------------------------|-----|----|-----|----|------------|----|
| Frozen section diagnosis | 58 | | 92 | | 28 | |
| Final diagnosis | Yes | No | Yes | No | Yes | No |
| | 58 | 0 | 1 | 91 | 15 | 13 |

TABLE IV – CANCER? Results with entire group

| | | |
|---|------|-----------------|
| Definite immediate report ("cancer" or "no cancer detected") later confirmed..... | 555. | (89.5 per cent) |
| Immediate report "Don't know" | 62. | (10.0 per cent) |
| Occult cancer (not immediately recognized or suspected, later reported) | 3. | (0.48 per cent) |
| Total | 620. | |

troperitoneal tumor, "adrenal," lip, salivary gland, stomach, pancreas, small intestine, vermiform appendix, large intestine, liver, bile duct, gall bladder, abdominal mass, nasal mucosa, lung, brain, etc.

Table IV indicates the results with the entire group, 620 tissues.

In summary, present methods of routine paraffin processing (using one of the robot mechanisms) makes possible procurement of paraffin sections very promptly, — as promptly as frozen sections if the tissues are first adequately fixed. Without adequate fixation, consistently good frozen sections cannot be secured. Even with adequate fixation, frozen sections are more frequently than not unsatisfactory if a really interesting (perplexing) problem is encountered. Excluding the occasional special stain problem,

the only present need for the use of the frozen section technique is in those cases where preliminary gross examination of a fresh surgical tissue (examined while the patient is in the operating room and under anesthesia) reveals the presence of a lesion which is almost certainly cancer. In such circumstances, its limitations being fully appreciated, the frozen section plays a useful role in the diagnosis of cancer.

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EARLY SUPPRESSION OF POSTOPERATIVE BILIARY DRAINAGE*

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THERE seems to be a tendency to disregard those postoperative drainages which follow surgery, exemplified by cholecystectomies, as of normal occurrence. Few therapeutic measures are employed to protect patients against the loss of such valuable fluids postoperatively which are allowed to saturate their abdominal dressings. Few papers have appeared to focus attention of surgeons on the rectification of this highly important matter. The marked loss of such fluid, through prolonged exudation, can very well impede the patient's convalescence. Furthermore, the protracted loss from severe biliary drainage of these precious fluids can easily produce dehydration, hypoproteinemia, and a definite upset in the electrolytic balance(1), (2), (3).

Surgical intervention initiates an inflammatory reaction of tissue in this surgical area. Christopher wrote that the surgeon produces some degree of inflammation with every stroke of the knife(4).

The five well known signs of inflammation are heat, swelling, pain, redness, and loss of function. The formation of the exudative reaction in inflammation is exemplified by omnipresent swelling, which is, in reality, the production of edema(5). If this inflammatory tissue fluid escapes the body it is termed an exudate(6). The production of such an inflammatory response is due, at least in part, to increased capillary blood pressure during the hyperemia (active) stage because of increased capillary permeability which transfers the osmotic pressure from inside to outside the capillary walls(7). In recent clinical observations, we have found there is a decided rise in venous pressures in such edematous surgical areas

through the indirect and the direct measurements of venous pressures(8). Apperly wrote that "clinical edema is usually not due to any one single factor but to a combination of several factors(9), which include the cognizance of capillary blood pressure, the protein osmotic pressure, capillary permeability, lymphatic drainage and various nervous influences." Of these various factors, perhaps increased capillary blood pressure (plus increased venous pressure) and the increase of capillary permeability are the most important factors which are concerned with the formation of clinical edema.

Some workers have looked upon edema formation as the body's attempt to cleanse the involved area of noxious or toxic substances. Hence, they feel that edema formation flushes away these poisonous materials. Although this concept is probably partially correct, an injury of the hepatic tissues also may produce an attempt on the part of viable liver tissue to flush away noxious substances through the increased production of an excessive flow of bile. Most surgeons have witnessed the marked exudation of bile through a drainage wound. The usual postoperative procedure is to reinforce the massive abdominal dressings which have been placed over the surgical site in order to catch and to absorb this marked increase of bile flow. Various drains are placed in the surgical area during surgery to expedite this postoperative biliary discharge. It is thought that allowing such an increased bile flow to escape the body freely decreases the pressure which might occur if such a drain were not employed as a safety valve.

A tremendous discharge of bile often occurs. This increased biliary discharge is accompanied by the inevitable and dangerous loss of electro-

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lytic fluids, proteins, water and hematogenous materials which can be only replaced, at least partially so, by repeated and costly blood transfusions. *We deem it of prime importance to suppress, if at all possible, or to prevent the rapid and dangerous loss of such biliary discharges at the very earliest opportunity.* We think the suppression of such discharges helps the body economy in many important ways. Dehydration, through the loss of such fluids, can be prevented. Proper and more rapid wound healing can be observed as can the conservation of important blood elements and many other life-sustaining substances which are connected intimately with the healing processes and even the preservation of life itself.

Several years ago, a study advocated the suppression of those lochias which invariably follow childbirth⁽¹⁰⁾. It was found that much better wound healing resulted from this procedure, and the mothers' convalescence periods were lessened markedly.

As with the loss of fluid from various wound discharges, attention must be given to fluid loss which results from bleeding, operative and post-operative. Martin⁽¹¹⁾ recorded "the incision is the commonest site of postoperative bleeding in abdominal operations. Careful control of all bleeding on opening the abdomen is not only desirable but essential. There frequently continues to be an ooze, even with care, both during the procedure and at the termination of the operation. A rapidly developing hematoma may account for wound infection, which interferes with the process of healing. This is accepted as one of the important factors in causing dehiscence or an incisional hernia."

We discovered, through prolonged observation, that this incisional oozing is capillary in origin. Its adequate control can be affected readily by using Kutapressin which is administered preoperatively. This material constricts the dilated microcirculatory components which produce such blood oozing during and after surgery. On many occasions we have noted that the incisional area appears to be considerably more dry than it would have been had not the above constricting agent been employed.

Such oozing of blood at surgery and after can be compared also to the fluid loss which ensues from wound drainage. As a matter of fact, both are quite similar in many ways. Hence,

their adequate control becomes mandatory to influence proper wound healing and to prevent operative shock with Kutapressin therapy. "The surgeon at the operating table becomes aware of the development of shock by the reduction in capillary bleeding and darkening of the venous blood. Arterial blood remains bright as long as the respiratory mechanism is not disturbed,"⁽¹²⁾ for fluid loss from hemorrhage during surgery is capable of producing shock.

A peculiar attitude was observed on the part of the many colleagues who discussed this obstetrical report. They could not understand why a "perfectly normal" post-partum reaction, as exemplified by the presence of lochias which invariably follow childbirth, should be suppressed or even advocated. According to some colleagues, we were interfering with a normal reaction or bodily response which naturally follows childbirth. Hence, the suppression of such fluid must, in some way, interfere with nature's normal response to injury. They refused to accept our suggestions for suppressing such fluid losses, and they regarded our constrictive therapy as a form of meddling in the normal processes which are connected with modern midwifery. We were unable to comprehend this reactionary attitude.

Our current study advocates the rapid suppression of post-operatively biliary discharges. Besides the reasons for controlling these discharges, which have been mentioned heretofore, the patients themselves welcomed this procedure. Massive abdominal dressings, which become soaked with such unpleasant biliary drainages, have the tendency to stick to the surgical areas, and thereby making such patients highly uncomfortable and quite unhappy, not to mention the protracted periods of convalescence which this undesirable and currently routine procedure produced by this widely used practice.

Years ago, surgeons thought of pus as being "laudable" for its mere presence was hailed as a good sign which was desirable for the proper healing of wounds. By the same token, and although pus is no longer "laudable," many surgeons still regard copious biliary drainages as being necessary to help clean out surgical wounds which follow gall bladder surgery. Such a concept should be condemned vigorously. To that end, we shall present the following therapeutic measures to suppress such copious biliary discharges which follow such surgery.

The Method

Vasoconstriction of the microcirculatory components in these biliary areas tends to limit the flow of such biliary drainage. From long experience, we have found this measure can be effected quite safely and efficaciously through the use of a non-toxic, injectable derivative from crude liver. The trade name of this preparation is Kutapressin.*

Our usual pre operative procedure, in order to control the pronounced capillary bleeding which at times accompanies surgery of all types, is to administer two cubic centimeters of Kutapressin subcutaneously about one hour before surgery is performed. Other pre-operative medications are administered concomitantly but with separate syringes and in the opposite arm of the patient.

As the patient begins to convalescence following surgery, another two cubic centimeter dose

of Kutapressin is administered twice daily. We have observed both a rapid cessation of biliary drainage, plus a more rapid healing rate for such postoperative wounds with the use of this material. There are no known contraindications for the use of this microcirculatory constricting preparation which we employ to tamponade capillary bleeding and also tissue drainage.

Postoperative Results and Observations

Twelve patients constituted the *experimental group* which received injections of Kutapressin subcutaneously twice daily (morning and evening) in 2 cc. doses. The control group of 12 patients were not given Kutapressin at any time.

The main items for comparison between the *experimental* and the *control* groups were (1) the amount of biliary drainage (2) the amount of capillary bleeding and (3) the rate of wound healing in these two groups of patients.

| | | Am't. Capillary Bleeding At Surgery | Postoperative Day Biliary Drainage Ceased | Postoperative Day Wound Healed |
|---------------------|-----------------------|---|---|--------------------------------------|
| Without Kutapressin | Control Group | Moderate | 7th to 32nd day | 14th to 38th day |
| With Kutapressin | Experimental Group | Slight | 1st to 4th day | 9th to 18th day |

Experience has proved that, although there is a marked difference in these two groups, it is mandatory to continue twice daily injections of Kutapressin until the patient's wound is entirely healed. A too early discontinuance of such injections causes the postoperative discharge to reappear. This presence of such biliary discharge will then be observed readily on the patients' abdominal dressings.

We desire to again direct the attention of our readers to the fact that these postoperative biliary discharges are controlled through the constriction of the dilated microcirculatory components in such a surgically involved area. Since Kutapressin's pharmacologic action does not last indefinitely, it is very necessary to continue the twice daily dosages until the wound becomes healed properly and firmly.

A similar control of lochial discharges had to be continued also with daily Kutapressin injections as had those serious drainages which were observed with extensive burns and with certain diseases of the integument as noted in cases with poison ivy and the exudatory dermatoses, and wherever marked exudates (discharges) occurred with other diseases.

Recently, the question arose as to controlling the marked fluid losses which accompany those acute idiopathic diarrheas in infancy through capillary constriction. Upon first thought, this idea may strike the reader as being a bit far-fetched. However, when one recalls the marked dilatory state of the microcirculatory ailmentary components in most cases with dysentery, it appears quite rational to vasoconstrict these dilated terminal vessels which supply the diseased and dilated intestinal microcirculatory system. Consequently, we have been using Kutapressin, in one cc. doses, for the treatment of such idiopathic acute infantile diarrheas with decided success. The reader should recall that those

*Kutapressin is manufactured by the Kremers-Urban Company of Milwaukee. This injectable material exerts its pharmacologic effect by constricting the dilated microcirculation which accompanies all forms of inflammation of tissues and organs. This preparation does not raise the systemic blood pressure. The material is non-allergenic, and it is practically painless upon injection.

marked fluid losses which accompany such disorders are merely another form of exudation.

Case Histories Involving Postoperative

Biliary Discharges

Two separate cases will be described to demonstrate the marked difference we noted with and without Kutapressin therapy. The first patient was a middle-aged male who underwent a cholecystectomy for the removal of a large solitary gall stone. This patient had complained of a generalized malaise which was accompanied by periods of chills with sweating. The night prior to admission in the hospital, he complained of a severe intense, sharp and constant pain in his gall bladder area. Opiates in large doses were needed to control the pain which was accompanied by partial shock. He remained in the hospital two weeks prior to surgery in order to prepare him for a cholecystectomy. Following surgery, he discharged a copious amount of bile-colored drainage in his abdominal dressings for a matter of 32 days. His general convalescence was very slow and the incision did not heal well so that the area became scarred badly.

In contradistinction to the above case another middle-aged patient exhibited a similar solitary gall bladder stone which was removed with a Collins-Thorek approach to the surgical area. The patient was given 2 cc. dose of Kutapressin an hour prior to surgery, and a similar dose during the afternoon of surgery. This procedure was repeated twice daily without interruption. His wound discharged bile through the Penrose drain for only two hours after he returned from the operating room. The drain was removed the third postoperative day, and the surgical area was completely dry and remained so throughout the period of his convalescence which totaled two weeks. The wound was very firm and without a hypertrophic scar. His original dressing had been changed on the third postoperative day when the drain was removed. Not enough biliary discharge escaped to stain his abdominal binder at the time this first dressing was changed. This wound remained completely dry when all dressings were removed on the 14th postoperative day. No further surgical dressings were necessary. This patient showed a much smaller amount of postoperative drainage than is usually the case with Kutapressin therapy. However, with this new technic, those patients in the experimental group have been able to

conserve those highly important hematogenous elements which would have been lost through soaking of the surgical dressings, had not this new form of therapy been employed. The rapid convalescence in this series of patients was uneventful (experimental group).

The following cases were taken from another series of patients which were not included in the control and experimental groups which have been described heretofore.

Case 1. Mrs. G. H. aged 45, housewife, entered the hospital because of a duodenal fistula following a gastrectomy performed elsewhere one month prior to present admission. Admitted because her family physician became concerned over the bile drainage. After surgical consultation, surgery was deferred pending the administration of Kutapressin. The drug was used and the drainage stopped in one week.

Case 2. Mr. W. H. aged 30 had a cholecystectomy. On the third postoperative day bile emanated from the wound. The operating surgeon asked for a consultation prior to a reoperation for what he believed to be bile flow from the cystic duct secondary to a slipped ligature. Consultant advised Kutapressin and the bile drainage ceased in five days.

Cases 3 and 4. In two instances where the common duct was explored and a T tube was inserted in the common duct, Kutapressin was given immediately, and drainage stopped 36 hours following removal of the T tube.

It might be very expedient to remember constantly that all discharges, no matter where their origin, constitute integral and important components of the process which is known as metabolism. To disregard and do nothing about such losses is to place the patient in jeopardy, particularly if those elements, which have drained from the patient, are not replaced properly and promptly. But far more preferable would be the institution of immediate measures which could prevent such losses. This concept and method then, constitutes the main premise of this paper. *We urge the conservation of these life-sustaining fluids through the proper vasoconstriction of the dilated microcirculation in all surgical areas.* The specific pharmacologic action, through the twice daily administration of Kutapressin, will fulfill the clinician's wishes for the immediate control and prevention of fluid losses which are illustrated by all un-

desirable postoperative biliary discharges.

We have discussed the problem of biliary discharges with other surgical colleagues, whose reactions seemed to be based upon their personal preferences as to the type of incisions they preferred and the amount of biliary discharges their own technics produced. Perhaps in no specialty is the presence of individuality more pronounced than it is with surgeons. Some surgeons feel their personal technics are the best and other methods will not suffice as well as do those methods which they employ.

Graduates of a particular medical school appear to adhere to those teachings they receive while students. Other surgeons will prefer the technic which they were taught during their residencies. One particular surgical colleague informed us that his biliary patients never exhibited such troublesome discharges postoperatively as we have discussed during the course of this paper. But upon examination of his actual handicraft, it became apparent that at least one of his patients unfortunately exhibited an intense biliary discharge which persisted for many weeks.

It appears quite obvious, therefore, that such troublesome postoperative biliary discharges do occur in spite of certain well established surgeons' claims that they rarely see such a postoperative complication. The fact remains that this postoperative sequela is in need of prompt rectification. A sincere trial of our proposed method will soon verify or disprove our thesis that such biliary discharges can be controlled promptly, efficaciously and safely through the constrictive pharmacologic control of the dilated microcirculation in such surgical areas.

Summary

A new therapeutic approach for the control and elimination of postoperative biliary discharges is described in detail. Use is made of Kutapressin, a non-toxic and non-allergenic derivative produced from liver which possesses the happy property of constricting the dilated microcirculatory components in postoperative biliary areas without raising the systemic blood pressure. This material is administered subcutaneously in 2 cc. doses twice daily. Both the dosage can be increased and the time of administration can be lessened whenever the condition of the patient warrants such a change in order to control these postoperative biliary discharges adequately. The important and practical reasons for employing this new procedure are discussed at length.

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The President's Page



MAY I EXTEND GREETINGS AND BEST WISHES TO THE UNITED STATES AND MEXICO, IN DECEMBER 1957. THIS YOUNG AND VERY VIGOROUS SOCIETY DESERVES THE ACTIVE PARTICIPATION OF ALL MEMBERS OF THE ARIZONA MEDICAL ASSOCIATION, NOT ONLY FROM A PROFESSIONAL STANDPOINT, BUT CULTURALLY AND SOCIALLY AS WELL.

I URGE ALL OF YOU TO ATTEND.

SINCE THE ASIAN FLU VACCINE HAS BECOME AVAILABLE IN VERY LIMITED SUPPLY, THERE HAVE BEEN ALL SORTS OF RUMORS, INCLUDING BLACK MARKET. MOST OF THESE RUMORS WHEN RUN DOWN ARE ONLY THAT. FOR INSTANCE, ALL EMPLOYEES OF ONE STORE IN PHOENIX WERE GIVEN THE FLU VACCINE. IT IS TRUE THAT THEY WERE GIVEN FLU VACCINE, BUT IT WAS OLD A & B, NOT THE ASIAN.

OUR GOVERNOR HAS STATED THAT HE WOULD TRY TO FIND SOME METHOD BY WHICH HE COULD HAVE THE STATE HEALTH DEPARTMENT TAKE OVER THE DISTRIBUTION OF THE VACCINE IN THE STATE. THE STATE HEALTH DEPARTMENT DOES NOT WISH TO BE CAUGHT IN THE POSITION IT WAS WITH THE POLIO VACCINE. IT IS MY OPINION THAT THE PRIVATE DISTRIBUTION IS THE BEST METHOD. ANOTHER SOURCE OF IRRITATION HAS BEEN THE PRACTICE OF THE DETAIL MEN OF TAKING ORDERS DIRECT FROM PRIVATE FIRMS AND THE SAME ONES ARE ALSO SHIPPING TO THE PRIVATE FIRMS AND TO SOME DOCTORS, BY-PASSING THE WHOLESALE AND RETAIL OUTLETS.

I WOULD RECOMMEND THAT ALL DOCTORS DO THE BEST THEY CAN TO COMBAT THE HYSTERIA THAT HAS BEEN BUILT UP IN THE PUBLIC PRESS AND DO EVERYTHING THEY POSSIBLY CAN TO ALLOW PROPER DISTRIBUTION THROUGH NORMAL CHANNELS. IF PROVED INCIDENTS OF BLACK MARKETING CAN BE OBTAINED, I WOULD SUGGEST THAT THE GRIEVANCE COMMITTEES OF YOUR COUNTIES TAKE PROPER AND PROMPT ACTION AGAINST THE VIOLATORS.

C. C. CRAIG, M.D.

PRESIDENT

ARIZONA MEDICAL ASSOCIATION, INC.

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control, with minimal side effects, for a wide variety of infections - reasons why ACHROMYCIN is one of today's foremost antibiotics.

Editorial Page

ARIZONA MEDICINE

Journal of

ARIZONA MEDICAL ASSOCIATION, INC.

VOL. 14

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NO. 11

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

8. Illustrations — Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.

9. Reprints — Reprints must be paid for by the author at established standard rates.

The Editor is always ready, willing, and happy to help in any way possible.

(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

PREPAREDNESS

OVER SEVEN years, since the start of the Korean war, there is still not a satisfactory civil defense organization in our state. Arizona lags behind in efforts to properly protect its people. Much of this is an outgrowth of a tendency to use hackneyed politicians or part-time C.D. employees. There is no organization to evacuate our people from the major communities and establish aid facilities in the outlying districts.

What have we established on a state level? Very little. Are there mobile hospitals available? Certainly, there should be two immediately available in this state, with the number that have been issued throughout the nation. Is there co-ordination with the public health department? None, to the best of my knowledge. What steps have been taken by civil defense and the public health department to establish a program to be followed should a catastrophe occur? None, to my knowledge.

What alarm system is available in Tucson to permit these people to evacuate this target site, the home of Hughes Falcon Plant and Davis-Monthan Air Force Base? None, even though many steps and many comments have been made that these systems were forthcoming.

What effort has been made to integrate the programs of the various cities of the state, or the various cities of the Southwest? None. These are steps that cannot be taken after the bomb drops, or the missile arrives. There must be an alerting mechanism. There must be a warning system, an evacuation program, and then an effort made to care for the people once they are evacuated. It is not a hopeless situation. It is a desperate situation.

How many of you have attended a civil defense preparedness program or meeting in your community? If you have, you have attended one of the most poorly organized meetings with little evidence of foresight or imagination. Chaos in a meeting! How can confusion from the C.D. organization lead to anything but disorder; if the people look to that organization for leadership in case of an emergency?

When will those of you who are responsible for the medical care of the people of this state become so dissatisfied that you will demand a more efficient organization with potential

powers that can move when the necessity arises?
D.W.N.

“MAN, MEDICINE, AND
MACHINES”

INCREASING blessings have always brought increasing responsibilities. The present generation has certainly been blessed with a multiplicity of new drugs with almost miraculous efficacy in the treatment of disease. We physicians are so dazzled by the beneficial effect of these drugs that we are apt, oftentimes, to forget the side effects which may seriously affect the patient’s judgment and interfere with his reactions. The patient does not know of such side effects unless we tell him, and is even more inclined to disregard them in favor of the beneficial effects obtained. In an age when most men have at least some contact with potential dangerous machinery, such as driving an automobile, piloting a plane, running a train, or operating manufacturing machinery, such disregard of these important side effects of present-day drugs can be disastrous.

A very timely discussion of this problem has been written by Dr. J. R. Winston of Chicago, Ill., and appears in the July 1957, issue of the Santa Fe Magazine. Doctor Winston says in part, “As medicine and machines develop into greater and greater capacities and complexities, so must man’s control over them improve. To exercise proper control, man must become increasingly alert . . . he must use good judgment at all times when operating his machine, lest it change from a machine of pleasure and progress to one of pain and destruction.” Doctor Winston then points out how a number of factors can influence judgment affecting the operation of such machines, and adds that, “Some of the newer, and some not so new, drugs may under certain circumstances also compromise man’s alertness.” One is reminded that some of the older drugs, such as opium, morphine and alcohol notoriously affect man’s judgment. Among the newer drugs are to be classed the sedatives, the antihistamine drugs, the depressants, the tranquilizers, and drugs used in the treatment of hypertension, etc.

We should not forget to always warn the patient during the use of such drugs and to guard against the development of a serious situation in the operation of machines, which endanger either the patient or other people.

R.L.F.

HOW ASIAN FLU VACCINE WILL
BE DIVIDED AMONG STATES

STATE and territories listed alphabetically, and percent of vaccine to each state follows.

Alabama, 1.9; Arizona, 0.6; Arkansas, 1.1; California, 7.9; Colorado, 1.0; Connecticut 1.3; Delaware, 0.2; District of Col. 0.5; Florida, 2.2; Georgia, 2.2; Idaho, 0.4; Illinois, 5.5; Indiana 2.6; Iowa, 1.6; Kansas, 1.2; Kentucky, 1.8; Louisiana, 1.8; Maine, 0.5; Maryland, 1.7; Massachusetts, 2.8; Michigan, 4.4; Minnesota, 1.9; Mississippi, 1.3; Missouri, 2.5; Montana, 0.4; Nebraska, 0.8; Nevada, 0.2; New Hampshire, 0.3; New Jersey, 3.2; New Mexico 0.5; New York, 9.5; North Carolina, 2.6; North Dakota, 0.4; Ohio, 5.3; Oklahoma, 1.3; Oregon, 1.0; Pennsylvania, 6.4; Rhode Island, 0.5; South Carolina, 1.4; South Dakota, 0.4; Tennessee, 2.0; Texas, 5.2; Utah, 0.5; Vermont, 0.2; Virginia, 2.1; Washington, 1.6; West Virginia, 1.2; Wisconsin, 2.2; Wyoming, 0.2; Alaska, 0.1; Hawaii, 0.3; Puerto Rico, 1.3; Virgin Islands, (0.01); Guam, (0.02).

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WE GUARANTEE TO THE DOCTOR AND HIS PATIENT

Topics of Current Medical Interest

THE MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

Arizona Medicine becomes the official organ of the new organization

IT WAS back in 1954 that Drs. H. E. Thompson, W. R. Manning and R. E. Hastings, while in Mazatlan, Sinaloa, Mexico, on the occasion of giving some scientific papers, were asked by local medical leaders to give of their counsel and organizational experience in setting up a Medical Society of Southern Sinaloa.

As a by-product of their successfully completed mission in Mazatlan, the idea of a medical society of the United States and Mexico, germinated. Fertilized by spreading discussion of the subject, increasing support and enthusiasm from colleagues on both sides of the border and a little tincture of time that allowed maturation, the idea was brought to fruition at the first organizational meeting which took place in Tucson, Arizona and which was attended by a Founder's group of both countries. It was called to order on Nov. 24, 1956 at the Pioneer Hotel. Although two scientific papers were presented, the time was spent primarily on organization matters: the basic purpose of the society having been enunciated and agreed upon, committees having been set up to edit a constitution, arrange a program for the next meeting and set up machinery for enrollment and membership.

A much larger group of physicians from Mexico and the United States gathered for the second conclave at the Gandara Hotel in Hermosillo, Sonora, Mexico on March 16, 1957. The constitution and by-laws submitted by the constitution committee were gone over, as well as the table of organization, the bilingual versions being equated. Scientific papers were presented, and a banquet, through the courteous hospitality of the Hon. Alvaro Obregon, governor of Sonora, closed the meeting.

An even better attended session took place in Mazatlan, Sinaloa, in May of this year, where a general assembly approved the constitution and elected officers as follows:

President, Dr. H. E. Thompson, Tucson, Ariz.

President-elect, Dr. H. G. Guevara, Mazatlan, Sin. Mex.

Vice President, Dr. W. R. Manning, Tucson, Ariz.

Secretary for U. S., Dr. J. E. Fonseca, Tucson, Ariz.

Secretary for Mex., Dr. A. L. Guevara, Guadalajara, Jal. Mex.

Treasurer for U. S., Dr. R. E. Hastings, Tucson, Ariz.

Treasurer for Mex., Dr. R. M. Alvarez, Mazatlan, Sin. Mex.

Co-ordinating Committee:

Dr. H. E. Thompson, Dr. H. G. Guevara, Dr. J. Chavez and Dr. W. R. Manning.

The following committees were appointed:

1. Governors' committee — for the purpose of official government liaison and intercession as well as for governmental representation in our society.

2. Educational committee — for promotion of ideas and benefits, particularly at the post-graduate, house officer and fellowship level.

3. Contagious diseases committee — with a mission to deal in epidemiology and international sanitary projects of common interest.

4. Editing committee — assigned the task of clearing, editing and translating the publications of interest to the society or published on behalf thereof.

The following committees were appointed:

EDUCATIONAL COMMITTEE

Chairman: Dr. Ignacio Chavez, Guadalajara, Jal., Mex.; Chairman: Dr. C. Gans, Morenci, Arizona; Dr. A. Topete, Guadalajara, Jal., Mex.; Dr. G. Griffith, Los Angeles, California; Dr. M. Lockie, Buffalo, New York; Dr. L. Dragstedt, Chicago, Illinois; Dr. G. Madrid, Hermosillo, Sonora, Mex.; Dr. J. A. Alvarez, Mexico, D. F.; and Dr. Guillermo Alanilla, Mexico, D. F.

EDITING COMMITTEE

Dr. Darwin Neubauer, Tucson, Arizona; Dr. J. J. Vazquez Romo, Hermosillo, Sonora, Mexico; Dr. Hector Guevara, Mazatlan, Sinaloa, Mex.; Dr. A. Guevara, Mexico, D. F.; Dr. M. Carreras, Tucson, Arizona; and Dr. Juan Fonseca, Tucson, Arizona.

GOVERNORS' COMMITTEE

Chairman: Dr. Norman Ross, Phoenix, Arizona; Chairman: Dr. C. Tapia, Hermosillo, Sonora, Mex.; Dr. Ignacio Chavez, Guadalajara,

Jalisco, Mex.; and Dr. Hector Guevara, Mazatlan, Sinola, Mex.

COMMITTEE ON CONTAGIOUS DISEASES

Chairman: Dr. Amado Ruiz Sanchez, Guadalajara, Jalisco, Mex.; Chairman: Dr. M. Carreras, Tucson, Arizona; Dr. Fernando Garcia Robles, Cuilacan, Sin., Mex.; Dr. Luis de Alba Luna, Mazatlan, Sin., Mex.; Dr. Francisco Agraz, Los Mochis, Sin., Mex.; Dr. Carlos Selva, Navajoa, Son., Mex.; Dr. G. Soberanes, Hermosillo, Son., Mex.; Dr. E. Riva Magallon, Magdalena, Son., Mex.; Dr. David Flores Guerra, Nogales, Son., Mex.; Dr. Humberto Rosas, Navajoa, Son., Mex.; Dr. Mario Garcia Montreuil, Baja California, Mex.; Dr. Horatio Quentinella, Mazatlan, Sin., Mex.

Dr. Zenos Noon, Nogales, Arizona; Dr. Calven Williamson, Yuma, Arizona; Dr. L. D. Beck, Phoenix, Arizona; Dr. A. J. DiPinto, Phoenix, Arizona; Dr. H. Ketcherside, Phoenix, Arizona; Dr. Donald Hill, Tucson, Arizona; Dr. W. Fee, Tucson, Arizona; Dr. D. Heim, Tucson, Arizona; Dr. J. Fritz, Tucson, Arizona; Dr. William Wharton, Tucson, Arizona; Dr. Ellis Browning, Springerville, Arizona; Dr. Albert Harris, Globe, Arizona; and Dr. Donald Wilson, Safford, Arizona.

A well represented scientific session was enjoyed by all in which a bilingual presentation of papers made the unanimous appreciation of the material possible.

Plans were then set for the forthcoming meeting, to be held in Tucson, Arizona, at the Santa Rita Hotel on Dec. 5, 6 and 7, 1957.

A complete copy of the program for that session is to be found at the end of this article. Invitations have been sent not only to all practicing physicians in Arizona, Sonora, Sinaloa and Jalisco, but also to a few interested American physicians of both countries as well as to the governors of the four states mentioned, some of whom have honored us with their acceptance.

Invitations for the December meeting in Tucson and reply cards were mailed to all physicians in the State of Arizona, as well as some in other states. They were also sent to all physicians of record in Mexico, in the states of Sonora and Sinaloa. It is expected that, through the Mexican secretary, similar invitations were mailed in the State of Jalisco. All these physicians were also given the opportunity to submit entries for the scientific program. A surprisingly large number of addressees have replied indi-

cating their intention to attend. Those who are working hard to set up a successful meeting are gratified. If any of the readers have not received an invitation and would like to be present, they can fill out and mail the questionnaire to be found at the end of this announcement and mail it at their earliest opportunity. We are happy to announce that the Santa Rita Hotel in Tucson is offering a discount to our Mexican colleagues attending the meeting. Thanks to a comparable generosity on the part of the "Pacífico del Sur" Mexican Railroad, obtained through the good offices of Dr. I. Chavez of Guadalajara, a 50 per cent reduction is being offered in railroad fares to those who attend the meeting.

The Medical Society of United States and Mexico and the editors of Arizona Medicine feel privileged to announce that at a recent meeting of representatives of both, this Journal accepted a request from the society, that this publication become its official organ. The society is grateful and plans to make use of the Journal freely, for announcements, statements of policy, as well as for publication of scientific papers by its members. We all envision a future of co-operative productivity.

It is planned to mail the Journal to the Mexican and other members free of charge. It is also planned to reproduce the material of interest to the society members in both languages.

We look forward to the success of Arizona Medicine's new role in greatly contributing to the realization of the ideals of the Medical Society of the United States and Mexico, especially in facilitating the binational scientific and personal liaison that we all cherish so much.

HEADQUARTERS: Santa Rita Hotel,

Tucson, Arizona — December 5, 6, 7, 1957

Wednesday, Dec. 4

Registration at the Santa Rita Hotel

Thursday, Dec. 5

9 A.M. to 11 A.M.

Committee Meetings

Education Committee

Room — See Lobby Directory

Chairmen: Dr. I. Chavez and Dr. C. Ganz

Governors' Committee

Room — See Lobby Directory

Chairmen: Dr. C. Tapia and Dr. Norman Ross

Editing Committee

Room — See Lobby Directory

Chairmen: Dr. J. J. Vazquez Romo and Dr. M. A. Carreras

Contagious Disease Committee

Room — See Lobby Directory

Chairmen: Dr. Amado R. Sanchez and Dr. M. A. Carreras

11 A.M. — 12:30 P.M.

Executive Committee

Room — See Lobby Directory

President, Dr. H. E. Thompson and President-elect, Dr. H. G. Guevara

12:30 — 2 P.M. — Lunch

Members and wives — (Style Show)

2 P.M. — 5 P.M.

General Assembly

Free Night

Friday, Dec. 6

9 A.M. — 12 Noon

Scientific Assembly

12 — 2 P.M.

Lunch

2 P.M. — 5 P.M.

Scientific Assembly

6:30 — 8 P.M.

Social Hour

8 P.M. — 1 A.M.

Dinner Dance

Saturday, Dec. 7

10 A.M. — 12 Noon

Executive Committee

Davis-Monthan Tour

University Tour

Recreation

Golf

6 P.M.

Social Hour

T.M.C. — 50

Auxiliary Dinner and Show

QUESTIONNAIRE

For those who have not already mailed it in.

Dear Dr.

- ☐ I plan to attend the next meeting of the Society of United States and Mexico in Tucson, Dec. 5, 6 and 7.
- ☐ I will be accompanied by my wife.
- ☐ I will not be able to attend.
- ☐ I am already a paid member.
- ☐ I am not a member, but would like to join.
- ☐ I am not on the mailing list of Arizona Medicine, but would like to receive it.

Name

Address

LA SOCIEDAD MEDICA DE LOS ESTADOS UNITED DE AMERICA Y MEXICO

Arizona Medicine se hace el organo oficial de la nueva Sociedad.

FUE EN el año 1954 que los Doctores H. E. Thompson y W. R. Manning y R. E. Hastings durante su estancia en Sinaloa, Mexico con el motivo de presentar unos escritos científicos fueron requeridos por los líderes médicos locales a dar su consejo y experiencia organizacional para desarrollar una Sociedad Médica del Sur de Sinaloa.

Como parte de su éxito en Mazatlan germinó la idea de una Sociedad Médica de los Estados Unidos de America y Mexico. Fertilizada por extensas discusiones sobre la idea, el soporte creciente y entusiasta de colegas de ambos lados de la frontera y un poco de tiempo para madurar, la idea produjo fruto en la primera reunión organizadora que tuvo lugar en Tucson, Arizona y que fué atendida por el Grupo Fundador de ambos países. La reunión fue llamada a orden en Noviembre 24, 1956 en el Hotel Pioneer. Aunque dos escritos científicos fueron presentados, el tiempo se uso principalmente en asuntos de organización. Los propósitos básicos de la Sociedad fueron enunciados y aprobados, y comités fueron nombrados para escribir una constitución, coordinar el programa para la reunión siguiente y preparar la maquinaria para registros y socios.

Un grupo mucho mayor de Médicos de Estados Unidos y Mexico se reunió para el segundo conclave en el Hotel Gandara en Hermosillo, Sonora, Mexico en Marzo 16, 1957. La constitución y reglamentos sometidos por el Comité de Constitución fueron examinados así como la tabla de organización y fueron presentadas en ambos idiomas. Hubieron varias presentaciones científicas y un banquete, presentado por la cortesía y hospitalidad del Honorable Alvaro Obregón, Gobernador de Sonora, clausuró la reunión.

El primer congreso de la Sociedad, acudido por un gran número de médicos se celebró en Mazatlán, Sinaloa, en Mayo de este año. La asamblea general aprobó la constitución y eligió los siguientes directivos:

Presidente, Dr. H. E. Thompson, Tucson, Arizona.

Presidente electo, Dr. H. G. Guevara, Mazatlan, Sin., Mex.

Vice Presidente, Dr. W. R. Manning, Tucson, Arizona.

Secretario por los E. U., Dr. J. E. Fonseca, Tucson, Arizona.

Secretario por Mexico, Dr. A. L. Guevara, Guadalajara, Jal., Mex.

Tesorero por los E. U., Dr. R. E. Hastings, Tucson, Arizona.

Tesorero por Mexico, Dr. R. M. Alvarez, Mazatlan, Sin., Mex.

Comite Coordinador:

Dr. H. E. Thompson, Dr. H. G. Guevara, Dr. J. Chavez, and Dr. W. R. Manning.

Los siguientes comités fueron nombrados:

1. Comité de Gobernador — para el proposito de liaison e intercesión oficial de los gobiernos y representación gubernamental en la Sociedad.

2. Comité de Educacion — para la promoción de cambio internacional de ideas sobre educación Médica, particularmente al nivel de post graduado, internos y becarios.

3. Comité de Enfermedades Contagiosas — para interesarse en asuntos de epidemiología y proyectores de salubridad internacional de intereses comunes.

4. Comité Editorial — con la tarea de investigar, editar y traducir las publicaciones de interés a la Sociedad o publicar artículos para la Sociedad.

Los siguientes comites fueron designados:

COMITE DE EDUCACION

Presidente: Dr. Ignacio Chavez, Guadalajara, Jal., Mex.; Presidente: Dr. C. Gans, Morenci, Arizona; Dr. A. Topete, Guadalajara, Jal., Mexico; Dr. G. Griffith, Los Angeles, California; Dr. M. Lockie, Buffalo, New York; Dr. L. Dragstedt, Chicago, Illinois; Dr. G. Madrid, Hermosillo, Sonora, Mexico; Dr. J. Acedo, Hermosillo, Sonora, Mexico; Dr. J. A. Alvarez, Mexico, D. F.; y Dr. Guillermo Alamilla, Mexico, D. F.

COMITE EDITORIAL

Presidente: Dr. M. A. Carreras, Tucson, Arizona; Presidente: Dr. J. J. Vazquez Romo, Hermosillo, Sonora, Mexico; Dr. Hector Guevara, Mazatlan, Sinola, Mexico; Dr. A. Guevara, Mexico, D. F.; Dr. D. W. Neubauer, Tucson, Arizona; y Dr. Juan Fonseca, Tucson, Arizona.

COMITE DE GOBIERNOS

Presidente: Dr. Norman Ross, Phoenix, Arizona, Mexico; Dr. Ignacio Chavez, Guadalajara, Jalisco, Mex.; y Dr. Hector Guevara, Mazatlan, Sinola, Mexico.

COMITE DE ENFERMEDADES CONTAGIOSAS

Presidente: Dr. Amado Ruiz Sanchez, Guadalajara, Jalisco, Mex.; Presidente: Dr. M. Carreras, Tucson, Arizona; Dr. Fernando Garcia Robles, Culiacan, Sin., Mex.; Dr. Luis de Alba Luna, Mochis, Sin., Mex.; Dr. Carlos Selva, Navajoa, Son., Mex.; Dr. G. Soberanes, Hermosillo, Son., Mex.; Dr. E. Rivera Magallon, Magdalena, Son., Mex.; Dr. David Flores Guerra, Nogales, Son., Mex.; Dr. Humberto Rosas, Navajoa, Son., Mex.; Dr. Mario Garcia Montreuil, Baja California, Mex.; Dr. Horatio Quentinella, Mazatlan, Sin., Mex.

Dr. Zenos Noon, Nogales, Arizona; Dr. Calven Williamson, Yuma, Arizona; Dr. L. D. Beck, Phoenix, Arizona; Dr. A. J. DiPinto, Phoenix, Arizona; Dr. H. Ketcherside, Phoenix, Arizona; Dr. Donald Hill, Tucson, Arizona; Dr. W. Fee, Tucson, Arizona; Dr. D. Heim, Tucson, Arizona; Dr. J. Fritz, Tucson, Arizona; Dr. William Wharton, Tucson, Arizona; Dr. Ellis Browning, Springerville, Arizona; Dr. Albert Harris, Globe, Arizona; and Dr. Donald Wilson, Safford, Arizona; and Dr. Donald Wilson, Safford, Arizona.

Se gozó de una sesión científica bien representada y la presentación bi-lingual hizo posible la apreciación unánime del material presentado. Los planes para la siguiente reunión fueron hechos. Esta reunión se llevara a cabo en Tucson, Arizona en el Hotel Santa Rita en Diciembre 5, 6 y 7 de 1957.

Una copia completa del programa para esta sesión se haya al final de este artículo. Invitaciones han sido enviadas no solo a todos los medicos de Arizona, Sonora, Sinaloa, y Jalisco sino tambien a varios medicos Americanos de otros estados que están interesados asi como a los oficiales de Salubridad Publica de ambos paises y a los gobernadores de los cuatro estados mencionados de los cuales algunos nos han honrado con su aceptación.

Invitaciones y tarjetas de respuesta para la sesión en Diciembre en Tucson han sido mandadas por correo a todos los medicos de Arizona y otros estados y a todos los medicos registrados en los Estados de Sonora y Sinaloa. Esperamos que invitaciones hayan sido tambien transmitidas a los medicos de Jalisco por medio del Secretario por Mexico. A todos estos medicos se les ha ofrecido la oportunidad de someter artículos para el programa científico.

Un gran numero ha contestado indicando su

intención de atender la reunión. Los socios que están que estén trabajando con entusiasmo para prepara la reunión estan agradecidos. Si alguno de los lectores no ha recibido una invitacion y le agraderia estar presente pueden completar y mandar el cuestionario al final de este escrito.

Nos alegramos en anunciar que el Hotel Santa Rita ofrece un descuento a nuestros colegas de Mexico que vengan a esta sesión y gracias a la gencrosidad del Ferrocarril "Pacífico del Sur" y al interes del Dr. I. Chavez de Guadalajara un descuento de 50% ha sido ofrecido para el pasaje de los que viajen a Tucson para atender la sesion.

La Sociedad Medica de los Estados Unidos Y Mexico y los Editores de Arizona Medicine se consideran privilegiados al anunciar que en una reciente reunión de representantes de ambas instituciones esta Revista aceptó la petición de la Sociedad que esta publicación sea el organo oficial. La Sociedad esta agradecida y espera usar la Revista frecuentemente para anuncios, declaraciones y publicación de articulos cientificos de sus socios. Todos vislumbramos un gran futuro de productividad mutua.

La revista sera enviada gratis a los socios. Tambien se espera reproducir el material de interes a los miembros de la Sociedad en ambos idiomas.

Todos anticipamos el exito de la nueva participacion de "Arizona Medicine" en la contribución a la realización de los ideales de la Sociedad Medica de Estados Unidos y Mexico, especialmente en facilitar la coalicion binacional cientifica y personal que todos deseamos.

CUARTEL GENERAL: Santa Rita Hotel,
Tucson, Arizona — Diciembre 5, 6, 7, 1957

Miercoles, Dic. 4

Registro en el Hotel Santa Rita

Jueves, Dic. 5

9 A.M. — 11 A.M.

Reunión de Comites

Comite de Educacion

Sala — Presidente: Dr. I. Chavez y Dr. C. Gans

Comite de Gobiernos

Sala —

Presidente: Dr. Norman Ross y Dr. C. Tapia

Comite Editorial

Presidente: Dr. M. A. Carreras y J. J. Vazquez

Romo

Comite de Enfermedades Contagiosas

Presidente: Dr. Amado Ruiz Sanchez y Dr. M. A. Carreras

11 A.M. — 12:30 P.M.

Comite Ejecutivo

Sala —

12:30 — 2 P.M. Almuerzo

Socios y Esposas (Exhibicion de Modas)

Presentacion de Huespedes Distinguidos

2 P.M. — 5 P.M.

Asamblca General

Noche Libre

Viernes, Dic. 6

9 A.M. — 12 P.M.

Asamblea Cientifica

12 — 2 P.M.

Almucrzo

2 P.M. — 5 P.M.

Asamblea Cientifica

6:30 — 8 P.M.

Hora Social

8 P.M. — 1 A.M.

Comida y Baile

Sabado, Dic. 7

10 A.M. — 12 P.M.

Comite Ejecutivo

Paseo por la Base Aerea Davis-Monthan

Paseo por la Universidad

Recreacion

Golf

Paseo por la Universidad

6 P.M.

Hora Social

Comida y Exhibicion por el Departamento

Auxiliar del Tucson Medical Center

CUESTIONARIO

Para aquellos quien no lo han enviado.

Dr. Juan E. Fonseca, Secretario

Soc. Med. De E.E.U.U. y Mexico

2409 E. Adams

Tucson, Arizona

Estimado Dr.

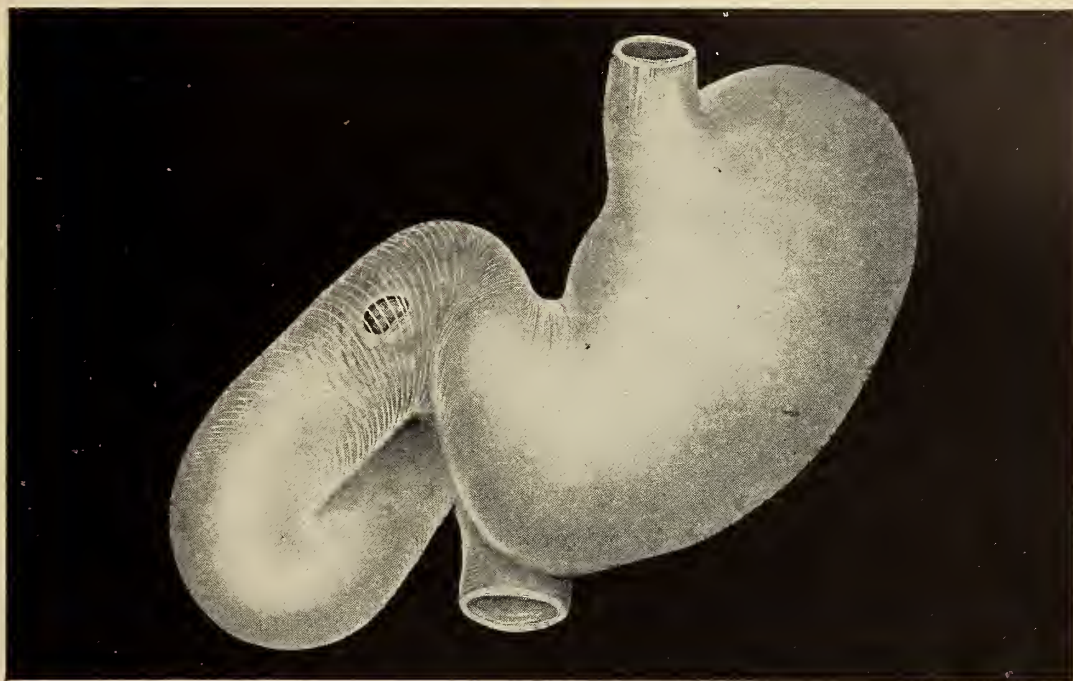
- ☐ Deseo asistir a la proxima reunión de la Soc. Med. de E.E.U.U. y Mex. en Tucson, Ariz. el 5, 6, 7, de Dic. proximo.
- ☐ Ire acompañado de mi esposa.
- ☐ No podre asistir.
- ☐ Ya soy socio.
- ☐ No soy socio pero deseo inscribirme.
- ☐ Deseo recibir copia mensual de la revista Arizona Medicine.

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Direccion

Ciudad

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Research in the Service of Medicine.

*Lichstein, J.; Morehouse, M. G., and Osmon, K. L.: Pro-Banthine in the Treatment of Peptic Ulcer. A Clinical Evaluation with Gastric Secretory, Motility and Gastroscopic Studies. Report of 60 Cases, Am. J. M. Sc. 232:156 (Aug.) 1956.

SEARLE

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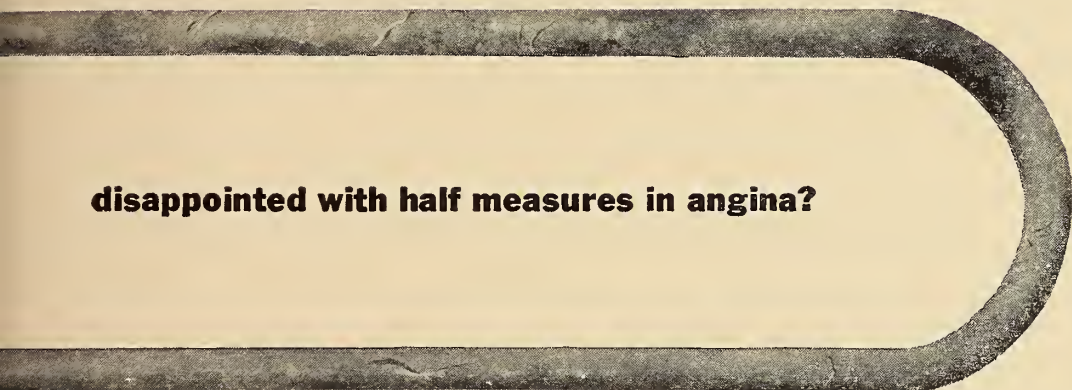
CARTRAX should be taken *before* meals, on a *continuous* dosage schedule. Use with caution in glaucoma.

1. Russek, H. I.: J. Am. Geriat. Soc. 4:877 (Sept.) 1956.

*Trademark



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disappointed with half measures in angina?

← READ THIS

PRINCIPLES OF MEDICAL ETHICS AMERICAN MEDICAL ASSOCIATION

PREAMBLE. These principles are intended to aid physicians individually and collectively in maintaining a high level of ethical conduct. They are not laws but standards by which a physician may determine the propriety of his conduct in his relationship with patients, with colleagues, with members of allied professions, and with the public.

Section 1. The principal objective of the medical profession is to render service to humanity with full respect for the dignity of man. Physicians should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion.

Section 2. Physicians should strive continually to improve medical knowledge and skill, and should make available to their patients and colleagues the benefits of their professional attainments.

Section 3. A physician should practice a method of healing founded on a scientific basis; and he should not voluntarily associate professionally with anyone who violates this principle.

Section 4. The medical profession should safeguard the public and itself against physicians deficient in moral character or professional competence. Physicians should observe all laws, uphold the dignity and honor of the profession and accept its self-imposed disciplines. They should expose, without hesitation, illegal or unethical conduct of fellow members of the profession.

Section 5. A physician may choose whom he will serve. In an emergency, however, he should render service to the best of his ability. Having undertaken the care of a patient, he may not neglect him; and unless he has been discharged he may discontinue his services only after giving adequate notice. He should not solicit patients.

Section 6. A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill or tend to cause a deterioration of the quality of medical care.

Section 7. In the practice of medicine a physician should limit the source of his professional income to medical services actually rendered by him, or under his supervision, to his

patients. His fee should be commensurate with the services rendered and the patient's ability to pay. He should neither pay nor receive a commission for referral of patients. Drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interests of the patient.

Section 8. A physician should seek consultation upon request; in doubtful or difficult cases; or whenever it appears that the quality of medical service may be enhanced thereby.

Section 9. A physician may not reveal the confidences entrusted to him in the course of medical attendance, or the deficiencies he may observe in the character of patients, unless he is required to do so by law or unless it becomes necessary in order to protect the welfare of the individual or of the community.

Section 10. The honored ideals of the medical profession imply that the responsibilities of the physician extend not only to the individual, but also to society where these responsibilities deserve his interest and participation in activities which have the purpose of improving both the health and the well-being of the individual and the community.

DOCTORS ARE CITIZENS, TOO

THESE notes are presented to the members of the medical profession, who wish to participate as responsible citizens in the congressional elections in their own localities, but who are concerned at the efforts of medicine's critics to deny this privilege by designating such acts as "political meddling."

Printed below are simple notes delineating what a doctor may or may not do, under the law, in connection with all federal elections.

LEGAL ASPECTS OF DOCTORS' POLITICAL ACTIVITIES.

1. Legally, it is imperative that doctors who engage in active support of candidates for office do so as individual citizens — and *not* under the auspices of their medical societies.

2. The American Medical Association cannot legally contribute to or expend funds in support of, or in opposition to, candidates for federal office.

3. State and county medical societies, whether incorporated or not, are subject to the *same* limitation.

4. The law prohibits a medical society from:
 - a. Endorsing a candidate, where it involves expenditure of general corporate funds,
 - b. Contributing funds to any candidate for federal office,
 - c. Using medical society letterheads or facilities in advancing work in behalf of a candidate,
 - d. Sponsoring any other form of advertising material for a candidate.

5. Individuals forming political committees must not make use of any official position or office which they may hold or occupy in any organization of a medical society nature.

6. These limitations, which appear in the Hatch Act, the Corrupt Practices Act and the new Criminal Code, are sometimes violated by careless or uninformed citizens.

7. American doctors must conduct their political activities *wholly within the law*.

THE POSITIVE SIDE

1. It is the right and duty of every citizen aggressively to further the candidacy of any qualified candidate for federal office and actively to oppose the candidacy of any candidate felt to be unqualified.

2. Any group of citizens, whether on a national, state or county level, can, as individuals, form political action committees for this purpose.

POLITICAL ACTION COMMITTEES

1. Local political committees, operating within a single state, are not required to file detailed reports of expenditures and contributions.

2. A committee operating in two or more states, or as a branch or subsidiary of any national committee, must so file.

WHAT YOU CAN DO AS AN INDIVIDUAL

1. Contribute personally any sum up to a maximum of \$5,000 to or on behalf of a candidate for federal office.

2. Solicit and receive contributions for the same purpose, except from those persons who are prohibited from contributing — for example, from persons on relief, or persons holding contracts with the federal government.

3. Actively manage political campaigns or participate in them by writing, speaking or otherwise advocating a candidate's election.

SOME OF THE DOS AND DONTs

1. Anonymous handbills and pamphlets are both illegal and unethical.

The law requires that the name of any person or political committee sponsoring campaign circulars or posters, and the names of responsible officers of any such committee, appear on the printed material.

2. No corporation, whether for profit or not, can make any contribution or expenditure of corporate funds for the purchase of newspaper advertising or radio time in connection with any federal election.

3. Medical societies not only have a right, but an obligation, to participate in registration drives and "Get out the vote" campaigns, where the purpose is to encourage people to exercise their right of franchise, rather than to support any given candidate.

4. A medical society can endorse a candidate editorially in the regularly published periodical of the society, if the cost of publishing the periodical is financed by separate and segregated subscriptions and advertising. Distribution must be confined to subscribers.

5. A medical society can write a letter to any member of congress or any other federal official, commending him on his stand on a medical issue, or it can publish an editorial in its journal or official publication, commending him. But a medical society cannot endorse his candidacy where it involves expenditure of general corporate funds.

6. What are the practicalities of effective doctor-participation of election campaigns?

It is recognized that every doctor should become a crusading citizen at a time when our whole American way of life is threatened.

How can doctors make their influence felt most effectively?

What can they do that will mean votes at the polls on election day?

a. Furnish direction for the profession in your community.

b. Register entire family and vote.

c. Solicit every doctor in your community to spend his full energy to fight in every possible way passage of laws for the socialization of medicine.

7. From experience in many states, a few doctors as citizens can set up a medical-dental committee or a healing arts committee. This type of committee in a congressional election means action on the basis of good citizenship.

8. This committee, in most circumstances, is organized as a branch of the general campaign

committee of a candidate. It takes on the specific job of:

a. Mobilizing all who are affiliated with health activities.

b. Financing its activity through collections from its own group.

9. After the initial organizing committee is established, it normally reaches out for financial support and mass membership through a hard-hitting letter to all members of the profession and allied groups — clearly defining the issue involved and appealing for membership and active participation in the campaign.

10. General meetings are sometimes held to supplement the letter appeal for members.

Give out specific instructions and assign specific duties to the volunteer workers.

11. Decide on a simple plan of campaign which can be interpreted clearly and put into operation with a minimum of time and energy.

12. Without doubt the most effective single mission doctors can perform in a congressional campaign, in most districts, is a thoroughgoing letter-writing job, beamed to his friends and patients — *personal* letters, signed by the doctor on his professional letterhead, and mailed in his own envelopes.

It must be re-emphasized that political action committees of this nature, which lend their support to candidates for federal office, must be independently organized by individual doctors. *They cannot, in any way, be subsidiaries of medical societies, and neither, legally, can the American Medical Association.*

JESSE D. HAMER, M.D.

Chairman — Medical-Legal Committee

**J.A.M.A. CLINICAL ABSTRACTS OF DIAGNOSIS
AND TREATMENT**

edited by I. Phillips Frohman, M.D. 564 pages. (1957) Grune & Stratton. \$5.50.

From the preface: "From the abstracts appearing in the past year I have selected, for this volume, those which I consider to pertain most directly to the two most important aspects of clinical medicine — diagnosis and treatment. If my efforts have been successful, the result should represent, in one handy volume, the cream of the year's medical literature in a highly condensed form. However, this volume is more than just a collection of selected abstracts, for they have been organized in a manner which was not possible when they were originally published in the Journal." . . . I. Phillips Frohman, M.D.

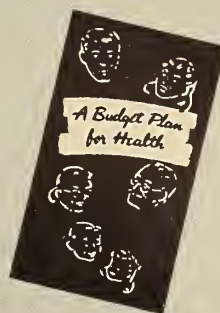
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By Guillermo Osler, M.D.

THE WESTERN TUBERCULOSIS CONFERENCE was held in Phoenix in September. It gave Arizonans a rare chance to entertain this group, and to hear its non-medical discussions. It elected an Arizona anti-tuberculosis worker to the presidency (Mrs. E. B. Thode). . . . It also presented a brief and neat PROGRAM FOR CHEST SPECIALISTS, and they turned out very well, in conjunction with the Arizona Trudeau Society. Dr. Sanders of Milwaukee, a young but world-known authority, spoke on "dusty diseases." Dr. Roger Mitchell of Denver (and formerly Trudeau San. at Saranac Lake) pondered over what we know, and don't know, about emphysema. Dr. Furcolow of Missouri, entitled to be called "Mr. Histoplasmosis," discussed a movie about his disease and himself. The "mystery cases" of Dr. "Osler" Oatway of California were not much of a puzzle to the Arizona audience — tho they were tough cases. . . . The Western TB Conference is composed of representatives from eight Western states, plus Alaska and Hawaii.

A surgical society with the following partial list of speakers might be considered very fortunate. It included Ochsner of New Orleans, Priestley and Harrington of Mayo's, John Jones of Los Angeles, Puestow of Chicago, Cole of Cleveland, Kaltreider of Baltimore, Harken of Boston, et al. . . . Where would you guess the meeting was held? The OGDEN SURGICAL SOCIETY, OF OGDEN, UTAH. They must have a uranium mine.

We have no conception of the INCIDENCE OF BRONCHITIS in England and Wales. It is said to be 20 to 50 times greater than in Scandinavian countries, for instance. The English blame it on burning coal, with greater air pollution. Infection, and smoking, and the climate are also factors which add to the bronchitic's problem. . . . Kings and commoners alike are affected, tho the opportunity of the poorer groups to escape is less. Actually the chance to minimize the several factors is not very great; what can you do about climate, coal, and even infection? . . . Smoking is a hopeless problem. If a relationship to cancer scares people so that American cigarette sales RISE, what can be done about English bronchitis? You might as well live in Los Angeles!

Two odd "anaesthesias" have recently been described. Both are known better for other purposes. . . . PYRIBENZAMINE solution is used now for topical effect in the bladder, the ears, the esophagus, etc. Did you ever hold a tablet on your tongue while waiting a moment before washing it down? . . . Analgesia is also said to be caused by CHLORPROMAZINE, better known as a tranquilizer, when it is combined with morphine or meperidine.

Abner Fuchs of New York has a few interesting points to make concerning the "COLD-TYPE ILLNESSES". . . . They are caused by a host of viral and bacterial agents. . . . Fifty per cent of those with "cold" symptoms have allergy as a cause (allergic coryza, or allergic rhinitis). They are usually due to airborne substances, with food being an occasional cause. The nasal membranes may be boggy, and they may contain eosinophiles. Antihistamines helps, but are not a substitute for allergic treatment. . . . The APC viruses (adenoid-pharyngeal-conjunctival) have been shown to be caused by at least 17 viral strains. They do not cause the nonfebrile, running-nose type of infection. A vaccine is being tried, but it is of no use in the "common cold." (It is probable that an epidemic in the Tucson schools this spring was due to the APC viruses).

The AVOCATION OF A DOCTOR is often interesting, sometimes startling. An important physician should be most newsworthy. The special interest of the president of the AMA, Dr. David Allman, should be of greatest interest — and is. He has been MEDICAL DIRECTOR OF THE ATLANTIC CITY MISS AMERICA PAGEANT for the past 36 years. . . . Dr. Allman has improved/spoiled the pageant by changing it from beauty to culture.

A national Sunday newspaper article has made a list of possible MEDICAL "BREAKTHROUGHS" in the next 10 years. This pattern considers the "victories" of the past 10 years, including cortisone, tranquilizers, antibiotics, anti-TB drugs, polio vaccine, etc. It also considers progress and new knowledge on the 10 possible future discoveries. . . . Penicillin reactions should be eliminated in 1957 by a new drug which clears penicillin from the body in a few hours. Blood clots may not only be prevented but dissolved by 1958. Vaccines for viruses which involve the lungs may be available by 1959. A measles vaccine is in sight for 1960. Drugs to alter mental behavior, and allow adaptation to daily stress are on the list for '61. Knowledge about arteriosclerosis may mature by 1962. A better drug for diabetes will be here in 1963. Alcoholism may be better fought by an anti-enzyme in '64. Synthesis of a hormone to stimulate the gonads to production, and to decrease sterility, is possible for 1965. The mystery of schizophrenia may yield to blood analysis by 1966. And by 1967 there may be a chemotherapy for one or more forms of cancer. . . . Anyone want to take a five out of 10 parlay?

The Ayerst Laboratories continue to urge the use of "Premarin," intravenously, FOR BLEEDING of various sorts. . . . They have a "reasonable

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interpretation" of the action, with evidence that it leads to a prompt and marked elevation of accelerator globulin (also known as Factor V, proaccelerin, or labile factor), an increase in the level of prothrombin, and a fall in the level of antithrombin. . . . There is no toxicity, it says, and the endocrine function is not disturbed by short-term usage. . . . The drug has been used to "effect hemostasis in well over 400,000 cases," which is more than we've seen lately.

Every now and then A NEW MEDICAL TERM becomes part of the language, sometimes before we know it. If it is specialized or complex, we can only hope that it will be simplified, or go away. If it is chemical or physiologic, as most of them are, we are usually stuck with it. . . . "Properdin" is a system in chemistry which contributes to our immune mechanism. It is called a "natural RESISTANCE TO INFECTION," and was described by Pillemer and associates at Western Reserve in Cleveland in 1954. It was publicly discussed this year at the New York Academy of Sciences. . . . Properdin is effective only when combined with all four components of serum complement, plus magnesium. Properdin levels are low after infection, shock, et al., unrelated to age, sex, etc., but are specific for various animal species, with the highest in the resistant rat, lowest in the susceptible guinea pig, and medium in us humans. It is said to be separate from gamma globulin effect. . . . Don't try too hard to remember details about it, since there are a few skeptics (who probably graduated the same year we did), and quite a lot of work remains to be done on the subject.

..Here's a report which we'll have to take "on trust." The Squibb Institute for Medical Research says that "Renografin" is a wonderful new contrast medium for INTRAVENOUS UROGRAPHY. . . . They put out a very fine booklet with nine articles by workers from Maryland to Oregon, and from Detroit and New York to Florida. . . . One group said that it had the same efficiency and toxicity as two other media. Others said it was better. . . . Sounds good. Looks good. Maybe so.

MISUSE OF TRANQUILIZER DRUGS is providing as much information as a study of normal dosages. E. C. Hiestand reports on the effects of ingestion (with suicidal intent) of 90 to 95 tablets of meprobromate. She became comatose, and a low BP, fast pulse and rate of breathing. There was no sensory response and muscle tone was absent. Amphetarmine was tried, but stopped, since it affects other CNS areas. An oral airway was established. O2 was given, and mucus aspirated. Phenylephrine was given with 5 per cent dextrose, IV. She began to respond in 18 to 24 hours and was awake and alert at 72 hours. All lab. tests were normal, tho the urine had the fruity

odor of meprobromate. Time seemed to have been more effective in this case than drug therapy. . . . Another Ohio clinic (Allen and Black) report the use of Levarterenol and cerebral electrostimulation for ingestion of 32 to 40 tablets of meprobromate. The respiratory and vasomotor collapse seemed notably to be helped by the stimulation, and the patient regained consciousness in 15 hours.

Here comes the attack on NON-FAT DIETS, a counteraction to those who have been urging its use for prevention of arteriosclerosis. . . . Dr. L. J. Baer, a Dearborn heart specialist, told the Michigan Dietetic Ass'n. that the liver and kidneys may be irreparably harmed by the attempts to eliminate unsaturated fatty acids from the diet. . . . Diets should be prescribed by a well-trained physician. They can be cut to a 25 per cent fat content and still be safe, says he.

Constancy in anything could be a major good quality. In writing for publication it certainly is, and even bad but regular columnists have become well known. . . . The Ohio State Medical Journal has a good and constant writer who has specialized in such a way that he is widely read and quoted. Dr. Harry Wein of Mansfield, Ohio, writes a column which consists of about 10 paragraphs. Each one DESCRIBES THE DERIVATION OF A MEDICAL OR PARA-MEDICAL WORD. . . . In a recent series he tells about such words as gene, genetics, genital, giddy, ginglymus, glutens, and gnat. Did you know that "giddy" came from the Anglo-Saxon "gydig" (meaning "God-held, or possessed by gods or demons"), by way of the derivation, "giddian" (meaning "to be merry")?

INJURIES OF THE HAND

by Ronald Furlong, F.R.C.S. 215 pages. Illustrated (1957) Little, Brown. \$9.

An "instruction manual" deals simply and admirably with common injuries of hand and wrist. Injuries to soft tissue and bone are discussed as to relevant anatomy and techniques. Infections are considered, but therapy in burns and the more elaborate phases of reconstructive surgery are omitted. This should be useful to surgeons who deal infrequently with these problems.

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PHS COMMITTEE ADVISES ONE CC SHOT OF ASIAN FLU VACCINE

A public health service advisory committee has recommended that adults be vaccinated with 1 cc of Asian influenza vaccine, but says that two doses of a tenth of a cc each are acceptable for children under the age of five. The children's doses should be given a week apart, injected intracutaneously, PHS says. Recently an American Medical Association committee recommended that "each physician decide for himself" whether to use 1 cc subcutaneously, or one-tenth of a cc intracutaneously for both adults and children.

PHS said its committee made its recommendation after considering both methods. The announcement said:

"The committee considered the question of intracutaneous inoculations of 0.1 cc of vaccine versus the present recommendation of 1.0 cc subcutaneously. It was recognized that information from previous outbreaks concerning the effectiveness of influenza vaccine was obtained from studies in which vaccine was administered subcutaneously, not intracutaneously. However, there was general agreement that influenza antibody levels may be obtained by the intracutaneous route which are comparable with those obtained by subcutaneous inoculation.

"The committee recommended that only the subcutaneous inoculation of 1.0 cc be endorsed for general use in adults. It noted that in certain special instances 0.1 cc given intracutaneously might be used advantageously but physicians using this method must rely on their own judgment regarding its usefulness in each instance.

"The use of two 0.1 cc intracutaneous doses, separated by at least one week in children under the age of five, has been recommended by the American Academy of Pediatrics, was recognized as an acceptable procedure."

With the latest release of Asian influenza vaccine, a total of 13.5 million doses have been made available. Of the latest release, 2,833,856 cc, 2,422,106 cc are going for civilian use and 411,750 for military. The civilian supplies are being distributed to states on the basis of population.

ALLERGIC REACTIONS TO INFLUENZA VIRUS VACCINE*

MONOVALENT influenza virus vaccine, Asian strain, is rapidly being made available in adequate supply. Among the millions of individuals expected to receive this vaccine will be some with varying degrees of sensitivity to the egg protein which is found in this and certain other vaccines prepared from egg-cultured viruses.

It is generally agreed that individuals who in any way indicate that they are allergic to egg-protein should not receive influenza inoculations, since the risk of producing a serious allergic reaction will ordinarily outweigh the risk of serious consequences from an attack of the Asian influenza, which so far has been a relatively mild and self-limited disease in the United States.

The American Foundation for Allergic Diseases is aware that it is common practice for the physician to ask his patient if he has any allergy or sensitivity to egg protein before such vaccines are given. Each vial of the new influenza vaccine contains a reminder on this point. However, because inoculations will be given in great numbers and possibly by nurses and technicians, the foundation is underscoring caution as regards the individual allergic to egg protein. The mass vaccination aspect increases the chance that patients with definite egg-protein sensitivity may present themselves for vaccination, unaware of this allergy, or careless in communicating to the physician that they have previously experienced sensitivity to eggs.

Allergic reactions due to egg hypersensitivity may occur following the injection of virus vaccines in persons of any age, but they are more common and apt to be more severe in young children. The injection of egg protein as a diagnostic procedure in very sensitive children has resulted in severe anaphylactic shock.

Ratner and Untracht found that one out of five allergic children exhibit dermal sensitivity to egg protein and this sensitivity is of clinical significance in about one out of 20 such allergic children. Practical clinical experience indicates

*Statement to physicians on allergic reactions to Asiatic Influenza vaccine by the American Foundation for Allergic Diseases.

that allergic reactions to virus will be encountered in fewer than one out of every several hundred persons receiving the vaccine, when, as is anticipated with the influenza vaccine, millions are inoculated. The majority of egg-protein allergies will be mild. Dangerous reactions are extremely rare.

Much of the difficulty will be avoided as the physician exercises caution in determining egg-sensitivity. Where there is doubt, or the physician feels it is important to establish that tolerance exists, the patient may be given an intradermal test with the vaccine itself. This should be performed with a 1:10 dilution, since undiluted vaccine produces a mild local reaction in nearly everyone. If a systemic or a severe local reaction occurs in response to the intradermal

test, sensitivity is indicated and the vaccine should not be given. The test itself should, of course, be administered with caution.

A burning sensation at the site of injection and a mild febrile reaction may occur in some individuals receiving the vaccine and should not by themselves, be misinterpreted as signs of an allergic response.

Physicians administering the vaccine will customarily have antidotes for allergic reactions conveniently at hand, and patients suspected of sensitivity may be observed in the office or clinic for half an hour after injection. The physician may wish to prescribe a tablet or capsule of a potent antihistaminic which the patient may take if a delayed reaction should occur.

OCT. 1, 1957 PROGRESS REPORT OF THE POISON CONTROL INFORMATION CENTER AT THE UNIVERSITY OF ARIZONA COLLEGE OF PHARMACY

SINCE the Sept. 1 report, 27 poisoning cases have been received at the poison control center. The statistics of the reports in rounded figures are as follows:

Age:

- 85 per cent involved the age group of 5 and under
- 15 per cent involved the age group of 16 to 30

Time:

- 37 per cent occurred between 6 a.m. and noon
- 37 per cent occurred between noon and 6 p.m.
- 18 per cent occurred between 6 p.m. and mid-

night

4 per cent occurred between midnight and 6 a.m.

4 per cent were unknown

Nature of incident:

96 per cent were accidental

4 per cent were intentional

Outcome:

100 per cent recovery

Causative agents:

30 per cent aspirin

30 per cent insecticides

7 per cent pain relieving preparations.

33 per cent miscellaneous, including window cleaner, stain remover, laxatives, plastic cement, pleasant pills, laundry bleach, a combination of sleeping pills and tranquilizers, lamp black, and sleeping capsules.

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FEDERAL MEDICAL LEGISLATION

THIS is an interim report on health and medical legislation in the 85th congress. It summarizes all action taken on health measures up to the time of adjournment on Aug. 30, and lists all significant bills that will be awaiting decision in the second session starting Jan. 7, 1958.

The small number of health-medical bills enacted this year might be regarded as deceptive. Actually 441 of these bills were introduced — a record total even for a first session. Congress deferred action on most of them for a variety of reasons — a desire for more extensive hearings, economy, and, possibly, an inclination to save some popular-appeal bills for next year. Experience has shown that the second session, always an election year, is the crucial one, when forces line up for final decisions on the big, controversial medical bills.

For example, no action was taken this year on such important measures as U. S. aid to medical schools and health insurance for federal civilian workers, nor on a growing list of ideas for government-paid hospitalization of OASI beneficiaries, a proposal that would have an obvious impact on the practice of medicine. There is every reason to believe congress won't neglect these subjects next year.

HEALTH LEGISLATION ENACTED

Doctor draft extension (PL 85-62) — Because the doctor draft was set to expire July 1, this was one of the first health measures passed by the 85th congress. It gives selective service authority until July 1, 1959 (when both this amendment and the regular draft expire) to call certain physicians up to age 35 for military service. Only those under age 35 with obligations under the regular draft and who have been deferred for any reason may be called. Defense department, meanwhile, says it is getting enough medical school graduates as reservists to preclude use of the new law at this time.

Medical research (PL 85-67) — Another early enactment was the fiscal 1958 budget for the department of health, education, and welfare. Congress voted \$2,503,130,381 for all HEW programs, including record high totals for medical research through the National Institutes of Health. Congress can — and in all likelihood will — receive requests from the administration

for additional money during the current fiscal year — through a deficiency appropriation.

Vendor medical payments (PL 85-110) — This law is intended to resolve some problems arising out of the social security amendments of 1956 with particular reference to vendor medical payments for public assistance recipients. Under PL 110, states are given the choice of either (a) using federal funds for vendor medical payments within the \$60 a month per recipient maximum or (b) establishing a single medical vendor payment financed by federal funds which were set by a 1956 law at one-half of \$6 a month per adult and one-half of \$3 per child, to be matched by states. States also can continue to make direct payments to recipients for medical and subsistence expenses.

Disability freeze extension (PL 85-109) — Under this law, a new deadline of July 1, 1958 is established for disabled persons covered under social security to apply for full retroactivity under the disability freeze passed in 1954. Applications filed by next July will allow workers to count the full period of disability provided they were eligible for disability benefits at the time the disability was incurred. After next July 1, any period of disability established for a worker cannot begin earlier than one year before the application is filed.

Indian & non-Indian hospitals (PL 85-151) — At the urging of some Western members of congress, PL 151 was enacted to authorize federal funds to help build non-profit or public hospitals and diagnostic or treatment centers on or near Indian reservations; the extent of federal contribution will be determined by the percentage of care given eligible Indians. The facilities have to agree to care for both Indians and non-Indians.

Vocational rehab traineeships (PL 85-198) — This measure extends from two to three years the maximum period of time over which the federal government can pay for partial financing of traineeships in physical medicine and rehabilitation. It amends the Vocational Rehabilitation Act which was expanded in the 84th congress.

Vocational rehab planning (PL 85-213) — amends the Vocational Rehab Act by extending the time federal funds may be used for planning, preparing and initiating expansion of programs in the states. Congress was asked to

act when the July 1 deadline approached with considerable unexpended funds on hand.

Codification veterans laws (PL 85-56) — Without making any substantive changes in existing law, this congress brought into a single code all veterans benefit laws, including those providing for hospital and medical care. Some of the laws date back 30 years.

Poultry inspection (PL 85-172) — under this law, federal inspection of poultry moved in interstate commerce becomes compulsory.

Military nurses incentives (PL 85-155) — In line with earlier efforts to make careers in the military more attractive. Congress passed this law improving career prospects for military nurses by making more and higher ranks available.

BILLS THAT PASSED ONE BRANCH OF CONGRESS

Pulmonary tuberculosis (HR 1264) — The bill declaring veterans suffering from active pulmonary tuberculosis to be permanently and totally disabled for pension purposes while hospitalized passed the house, but is pending in the senate finance committee.

HEARINGS HELD BUT NO FURTHER ACTION TAKEN

Bricker amendment (SJ Res. 3) — The long-standing proposed amendment to the Constitution by Senator Bricker (R., Ohio) limiting the domestic effect of treaties and other international agreements.

Civil aviation medicine (S 1045) — Would establish in the Civil Aeronautics Administration an office of civil aviation medicine along with a medical research institute.

Welfare-pension plans registration (S 1122, S 2888) — Provide for registration, reporting and disclosure of employee welfare and pension benefit plans. Both house and senate committee hearings held and some action expected next session.

Highway safety (S 1292) — Hearings in house but not on any specific bills. Proposals include compulsory installation of safety belts.

OVR pilot center (S 2068) — Would give the office of vocational rehabilitation authority to use federal funds for construction of facilities for a pilot rehab center in the Washington area.

Non-service-connected care (HR 58) — Would impose added requirements on veterans with non-service-connected disabilities seeking hospitalization or domiciliary care in VA facilities.

Barbiturates control (HR 503 & others) — Regulate the manufacture, distribution and possession of habit-forming barbiturate and amphetamine drugs, and provides for registration and record-keeping, but with doctors exempted.

Department of civil defense (HR 2125 & others) — Establish a new executive department of civil defense which would have supremacy over the military in times of disaster in certain defense areas.

Salary rise for VA doctors (HD 6819) — Increases salaries of medical personnel in VA, and also raises optometrists to the level of physicians for purposes of pay.

Chemical additives (HD 6747 & others) — Require pre-testing of many chemical additives to be used in food processing and marketing. The house has held extensive hearings on this subject.

Grants-in-aid-study (H. Res. 312) — Provides for a select committee of the house to study federal grants-in-aid to state and local governments, and other groups. It got as far as house rules committee approval.

Advisory group for blind (HR 8427) — Establishes a temporary national advisory committee for the blind.

BILLS STILL IN COMMITTEE; NO HEARINGS HELD

Hospitalization for aged (HR 9467, 9448 & others) — Various bills provide through different approaches a certain number of days of free hospitalization each year for old age and survivors insurance recipients and beneficiaries, some bills also would pay in-hospital surgical and medical care costs.

Compulsory health insurance (S. 844, HR 3764) — A 1957 version of the old and rejected national compulsory health insurance measures of 1948, the sponsors being Senator Murray (D., Mont.) and Rep. John Dingell, Jr. (D., Mich.)

Liberalizing OASI coverage (S. 173 & others) — These measures would liberalize the age and coverage requirements in the OASI disability program.

OASI coverage for doctors (HR 8883) — Phy-

sicians would be brought under social security on a compulsory basis.

Jenkins-Keogh plan (HR 9 and 10) — Defer federal income taxes on portions of earnings of the self-employed for the purchase of retirement plans.

OASI tax increase (HR 7669) — Increases the wage base from the present \$4,200 to \$6,000 in computing the OASI tax.

Federal workers' health insurance (S. 2339 & others) — Provide for a voluntary, contributory health insurance program for federal employees and their dependents, both basic and major medical coverage.

Overseas federal medical care (HR 6141) — Provides health and medical services for U. S. civilians overseas who are employed in government jobs, and also would cover their dependents.

Federal medical school aid (HR 6874) — Authorizes federal grants to medical schools and research facilities for construction of classrooms and laboratories for teaching.

National radiation institute (S. 1228 & H.R. 4820) — Establish a national radiation health institute within the National Institutes of Health.

Lobbying amendments (S. 2191) — Would rewrite regulations covering lobbyists and lobbying in congress.

Federal loans to hospitals (HR 1979) — For those hospitals interested in construction loans rather than Hill-Burton grants, these bills would authorize long-term government loans.

Reinsurance (S 1750 & HR 6506) — Permit pooling by various insurance companies without regard to the anti-trust laws for purpose of encouraging new experiments in health insurance coverage.

Aid for the aged (HR 383 and others) — Authorize grants for studies and projects for the aged.

Federal advisory health council (HR 2435 and others) — Establish a federal advisory council on health, as recommended by the Hoover commission.

Longshoremen's Act (HR 7303 & S. 2400) — Amend the Longshoremen's and Harbor Workers Compensation Act so that injured workers can select their own physician and hospital.

Labeling for household use (HR 7388 and others) — Regulate the labeling of hazardous substances intended for household use.

FOLSOM HEALTH AIDE LISTS MEDICAL NEEDS, CITES PROBLEMS OF AGED

SECRETARY Folsom's special assistant for health and medical affairs, Dr. Aims C. McGuinness, has outlined some major health items which may serve as the framework of the administration's health goals for the 1958 session of congress. In an address in Maine at the dedication of a new chronic disease and rehabilitation facility, Dr. McGuinness made these points:

Health aid to the elderly — The principles of voluntary insurance should be applied to the prepayment of medical expenses of a higher proportion of elderly people; the administration feels voluntary health insurance can advance this goal most effectively. PHS also plans to develop demonstrations of home-care services, health maintenance clinics and restorative services. (Several bills now in congress would offer hospitalization to OASI beneficiaries.)

Hospital care costs — Physicians must constantly ask themselves if they are putting a patient in a hospital when he could be served as well or better on an ambulatory basis. It is essential the problem of rising hospital care costs be solved.

Rural health — In the more rural areas where hospital facilities might not be available at all, the most essential health services could be provided through diagnostic and treatment centers. (Several proposals have been made for Hill-Burton-type grants for clinics separate from hospitals. Under present law diagnostic and treatment centers must be owned by a state, political subdivision or public agency, or by a corporation or association that owns and operates a non-profit hospital.)

Hospital role in medicine — General hospitals must broaden their services and achieve greater co-ordination. The term "hospital care" should include not only bed care, but diagnostic service and service to ambulatory patients as well.

Federal medical school aid — Failure to help meet the needs of medical schools would be the worst kind of false economy. The administration's pending \$225 million program of construction grants would bring classrooms and laboratories much closer to current and projected needs.



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VETERANS ADMINISTRATOR SCORES DOCTORS ON MEDICAL CARE ATTITUDE

VETERANS Administrator Harvey Higley has told the American Legion that some medical men now apparently believe that the public is no longer greatly concerned with the veteran and his problems. "And so they no longer hesitate to attack medical care for veterans, with particular reference to those having non-service-connected disabilities." Ten years ago, "there were few who would challenge the legislation, in effect since 1924, which provides that a veteran with a service-connected disability has the right to enter a VA hospital if he cannot pay for the care elsewhere and if the VA has a bed available," he told the Legion convention in Atlantic City.

His solution: a firm legislative policy on VA hospitalization, something he said he has been seeking for many months. Commented Mr. Higley: "So long as a definite policy is lacking, requests for new and additional beds will receive little if any consideration." He then reiterated his plan for settling on a level of 125,000 authorized beds in VA hospitals.

Mr. Higley said that if the policy is to rule out care of non-service-connected cases, this should be frankly stated so that states, counties and cities may take up the load.

He placed the number of non-service-connected veterans on the waiting list at 22,000 of whom 17,000 are suffering from mental illness. He proposed the closing down of 3,906 unceded tuberculosis beds and their replacement with 3,300 other beds. New construction would include a 1,000-bed hospital in Gainesville, Fla., which Mr. Higley said he was confident could be staffed "contrary to our situation elsewhere." Other hospital needs: 250-bed addition to hospitals at Coral Gables and Bay Pines, Fla.; a new 300-bed unit in southern Texas, and 500-bed addition in southern California. These last three would be general medical and surgical beds.

Because nearly 5,000 of the mentally ill veterans are in the New York City area, a 500-bed addition at Montrose, N. Y., would be needed at a minimum, according to Mr. Higley.

PULMONARY COMPLICATIONS OF ABDOMINAL SURGERY
by A. R. Anscombe, F.R.C.S. 121 pages. (1957) Year Book. \$4.

The many facets of a problem that still plagues even the most skilled and conscientious abdominal surgeons are presented concisely and comprehensively. Physiological principles, etiology, and management are emphasized.

Stacey's Medical Books, San Francisco.



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Organization Page

CIVICS

By Norman A. Ross, M.D.

A careful review of the following Articles of Incorporation of the Arizona Medical Educational Foundation is presented. These articles were not written by a physician. The following then, shows the public's opinion and the interest and the responsibilities they assign to members of their medical profession. I offer this as typical of today's medical public relations in Arizona.

ARTICLES OF INCORPORATION OF ARIZONA MEDICAL EDUCATIONAL FOUNDATION

Know All Men By These Presents:

THAT we, the undersigned, all residents of the State of Arizona, and citizens of the United States, having voluntarily associated ourselves together for the purpose of forming a nonprofit corporation pursuant to the provisions of Sections 10-451, et seq., Arizona Revised Statutes, adopt the following articles of incorporation for such corporation:

ARTICLE I

The name of the corporation shall be *ARIZONA MEDICAL EDUCATIONAL FOUNDATION*.

ARTICLE II

The principal office for the transaction of the business of the corporation shall be in Phoenix, Arizona, but this corporation may do and transact business and its Board of Directors may meet at such other place or places or in any other jurisdiction of the United States of America or elsewhere in the world as may be convenient or necessary for the conduct of the business of the corporation.

ARTICLE III

This corporation is organized, not for profit, and its objects and purposes to be carried on are to receive and maintain funds and apply the income and principal thereof to promote the well-being of mankind throughout the world. It shall be within the purposes of said corporation to use, as means to that end, research, publication, the establishment and maintenance of

charitable, benevolent and medical research activities, agencies and institutions and the aid of any such activities, agencies, institutions and colleges already established and any other means, persons or agencies which from time to time shall seem expedient to its membership or directors and which shall further the purposes above named, and to build and promote a hospital or hospitals, medical school or college or colleges as it deems necessary to further its purposes, and to buy, sell, lease, sublease and market such real property and personal property as this corporation might adequately and reasonably need, and to conduct all other activities incidental to the purposes of this corporation.

In addition to the foregoing, and in furtherance and not in limitation of the powers conferred by the laws of the State of Arizona and the objects and purposes herein set forth, this corporation shall have the following powers:

(a) To encourage medical research, tests and other phases of medical work, and the training, as well as the education, of persons in the several fields of health, including by illustration, hospital administrators, nurses, technicians, vocationally trained persons, public health personnel and health educators;

(b) To encourage the preparation of original papers on medical topics;

(c) To publish papers and reports and disseminate knowledge and experience of value to the practice of medicine;

(d) To co-operate with educational institutions in the maintenance of high standards of medical education;

(e) To encourage the personal and professional development of young doctors.

* * *

From the American Medical Association Washington Letter, Oct. 4, 1957, we offer their report of a statement by Basil O'Connor, president of the National Health Council, definitive of the new commission on health careers of this association. Mr. O'Connor is also the head of

the National Foundation for Infantile Paralysis.

The new commission will "plan ways to meet the acute need for qualified health personnel in the United States."

According to Mr. O'Connor, lack of manpower "poses the biggest threat not only to our present health services, but to the future progress of medical science. . . . Many people, when they think of the health professions, naturally picture the physician, the dentist and the nurse. Actually the range is infinitely broader. Workers

in more than 150 health occupations guard the well-being of American citizens. Many of these professions are inter-linked and mutually dependent. The great majority are dangerously understaffed."

* * *

The Arizona Medical Educational Foundation in its broad approach to health education was formed in recognition of Arizona's need, and to promote and co-ordinate these 150 separate health educational activities.

AMERICAN CANCER SOCIETY

REGION Six of the American Cancer Society held its Annual meeting Sept. 23 and 24, 1957 with the prime topic of discussion, the Application of Cytology in the Detection of Uterine Cancer. The faculty included Dr. Ian McDonald of the University of Southern California, Dr. David A. Wood of the University of California, Dr. E. G. Holmstrum, of the University of Utah, and Dr. Harris Barber of Albuquerque, N. M.

In the establishment and implementation of the cytology program on the local level, the cancer society is to be commended that it is taking a cautious approach and will take every step that is practical and feasible to co-ordinate the program with the state and local cancer societies and have the doctors who must carry out this program fully aware of the plan under consideration.

The Arizona Division is establishing a cytology co-ordination committee to fit the program to the needs of this division. A full understanding will be obtained with the pathologists of the state and no steps taken without their full co-operation. If a plan is accepted, it will be submitted to the council of the Arizona Medical Association for its endorsement. Then an effort will be made to recruit and train such screeners as may be necessary to aid the pathologists. It

is contemplated that not more than 3.3 per cent of all slides that are screened should necessitate review by the pathologist in control of the program.

The Arizona Division feels that it is in a position to assist in the establishment or aid in the establishment of facilities, should such steps become necessary.

Through the local units of the cancer society, a professional educational program will be organized for the dissemination of information as applicable to this program to the community doctor.

The above professional education program in turn will be followed by a public education program to acquaint the public with the established program and the facilities available.

In every case, strict efforts will be made to maintain a normal patient-doctor relationship and an effort pursued to continue this program on an annual basis in a self-supporting manner.

If the cancer society can follow these steps as laid out by the national organization, it is likely that we can probably save an additional 16,000 women each year from death by cancer of the cervix. For certainly with carcinoma in situ developing approximately 10 years prior to invasive cancer, we should be able to take adequate steps to prevent the invasive disease from developing.

MENTAL DEPRESSIONS AND THEIR TREATMENT

by Samuel Henry Kraines, M.D. 55 pages. (1957) Macmillan. \$8.

The problem of depressions, one of the most mishandled and misdiagnosed medical disorders, is covered probably more comprehensively than in any prior book. This one will give any physician the armamentarium with which to meet the gamut of depressions, from routine problems to the major psychotic difficulties.

Stacey's Medical Books, San Francisco.

OBESITY: Its Cause, Classification, and Care

by E. Philip Gelvin, M.D., and Thomas H. McGavack, M.D. 146 pages. (1957) Hoeber-Harper. \$3.50.

The authors state in the preface, "We have no panacea to offer, nothing sensational nor magical. We do feel that the program for the management of obesity as presented in these pages is safe, effective, and consistent with principles of good nutrition, yet simple for the physician to prescribe and convenient for the patient to observe."

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HEALTH INSURANCE

THE number of persons protected against the cost of hospital and surgical care through insurance company policies has been increasing at an accelerated pace in recent years, reported the Health Insurance Institute. In an analysis of the trends in voluntary health insurance coverage in the United States during the past six years, the institute said that the growth rate in the last three years of both forms of health cost coverage has risen markedly with each succeeding year.

According to figures supplied by the nation's insurance companies, the institute's analysis revealed, there were 66.3 million persons covered for hospital expenses at the end of 1956 through individual and family health policies and through group insurance programs, a 79 per cent increase over the 1950 total of 37 million.

A closer examination of this growth trend over the past three years shows a constantly faster rate of expansion in hospital expense protection. In 1954 there was an increase of 5.9 per cent over 1953 in the number of people covered, the percentage gain in 1955 over 1954 was 7.9 per cent, and the rate of growth in 1956 over 1955 was 11.1 per cent.

Surgical expense insurance, which helps pay for the cost of operations, included some 63 million persons covered in 1956, through policies available from insurance companies the institute report said. Compared with the 1950 total of 33 million, the rate of growth in the number of people protected was 91 per cent during this six-year period.

As with hospital expense insurance, the yearly increase in the number of people with insurance policies covering surgical expenses has been accelerating during the past three years, the institute pointed out. The rate of growth in 1954 was 4.6 per cent over 1953; in 1955 the increase was 7.3 per cent over 1954; and 1956 recorded a rise of 11.2 per cent in the number of people protected over the comparable period for 1955.

Regular medical expense insurance experienced a phenomenal period of expansion in the six years covered by the institute study. A relatively newer form of health cost protection as compared with hospital and surgical expense insurance, regular medical expense coverage, providing for doctor visits for non-surgical care, rose 281 per cent in the number of people covered between 1950 and 1956. By the end of last year, there were 29.8 million persons included in policies available from insurance companies covering costs for medical care, as compared with 7.8 million in 1950.

Comparing the growth trends of regular medical expense insurance during the past three years, the institute reported a 12.9 per cent increase in 1954 over 1953, and a rate of growth of 20.8 per cent between 1954 and 1955. In 1956 the increase in the number of people was 18.9 per cent over 1955.

The newest form of health cost protection, major medical insurance, outpaced all other forms of coverage. Introduced by the insurance business in 1948, major medical expense policies help cover the costs of serious, or catastrophic illness, including hospital bills, physi-

ANALYSIS OF GROWTH OF VOLUNTARY HEALTH INSURANCE 1950-1956*

| Type of Coverage | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|
| HOSPITAL EXPENSE: | | | | | | | |
| No. of persons (000) | 36,973 | 44,572 | 47,272 | 52,218 | 55,282 | 59,654 | 66,259 |
| Yearly per cent increase | | 20.6 | 6.1 | 10.5 | 5.9 | 7.9 | 11.1 |
| Net persons gained (000) | | 7,599 | 2,700 | 4,946 | 3,064 | 4,372 | 6,605 |
| SURGICAL EXPENSE: | | | | | | | |
| No. of persons (000) | 32,994 | 40,013 | 45,328 | 50,464 | 52,806 | 56,645 | 62,996 |
| Yearly per cent increase | | 21.3 | 13.3 | 11.3 | 4.6 | 7.3 | 11.2 |
| Net persons gained (000) | | 7,019 | 5,315 | 5,136 | 2,342 | 3,839 | 6,351 |
| MEDICAL EXPENSE: | | | | | | | |
| No. of persons (000) | 7,807 | 11,430 | 14,265 | 18,361 | 20,721 | 25,031 | 29,756 |
| Yearly per cent increase | | 46.3 | 24.8 | 28.7 | 12.9 | 20.8 | 18.9 |
| Net persons gained (000) | | 3,623 | 2,835 | 4,096 | 2,360 | 4,310 | 4,725 |
| MAJOR MEDICAL EXPENSE: | | | | | | | |
| No. of persons (000) | | | 689 | 1,220 | 2,198 | 5,241 | 8,876 |
| Yearly per cent increase | | | | 77.0 | 80.2 | 138.4 | 69.4 |
| Net persons gained (000) | | | | 531 | 978 | 3,043 | 3,635 |

*Adjusted for duplication of persons covered among insurers.

cians' charges and other medical care services, and are available alone or as a supplement to the other types of expense policies.

At the end of 1952, when the first accurate records were available, there were some 689,000 persons in the nation with major medical coverage. In the four years since, this form of health insurance rose at an unprecedented rate of 1,188 per cent, for a total in 1956 of 8.9 mil-

lion persons. A recent estimate made by the Health Insurance Council was that, as of May 1, 1957, this total exceeded 10 million persons, demonstrating a continuance in the rapid growth of this form of insurance against the cost of illness and accident.

A breakdown of the analysis of the six-year trend in voluntary health insurance coverage is shown in article.

SOCIAL INSECURITY

L. D. Sprague, M.D.

THIS year, the first time, the social security system will *pay out more* money than it collects in payroll taxes. This fact has already received some notice in the press, but has been reviewed with too little critical analysis. Payroll taxes fell short by \$125 million of covering the benefits paid out to the social security recipients during the fiscal year just ended. Social security planners themselves predict a deficit of roughly \$300 million for this year, and they say it may run as high as \$1 billion for the next year!

Physicians have, fortunately, thus far escaped from being entrapped in this form of welfare-ism. However, as certainly as night follows day, tremendous pressures will be brought to bear during the coming session of congress to bring physicians under compulsory inclusion in the system. Even a minority of physicians themselves are looking with some favor upon inclusion. Such groups are particularly vocal in the East and include the Physicians' Forum of New York. This leftist group, it might be well to recall, testified in congress in the 1940s for passage of the Murray-Wagner-Dingel socialistic government-controlled medical care bills so vigorously opposed by organized medicine. The American Medical Association has consistently voiced its opposition to compulsory inclusion of physicians under the Social Security Act. Attention should be drawn to the word "compulsory" and fair warning given that congress will never authorize a voluntary type of coverage for physicians, as advocated by some. The reasoning behind the AMA's opposition is based on sound practical and philosophical principles.

A progressive increase in the tax levy has been and will continue to be a feature of the system. By 1930, under present planning, payroll taxes will advance for all persons under the

Social Security Act. Workers and employers will pay, each, 2¾ per cent; self-employed persons will then pay 4½ per cent, based on income of \$4,200 per year. The tax rate and the tax base have progressively increased since 1935 from 1 per cent on \$3,000 to present rates. A continued progressive increase in both tax rate and tax base are built-in features of the system. No one has any idea how much social security is going to cost next year or even 20 years from now. Congress may at its discretion raise the taxable base to any figure and will be forced to raise both the base and rate to prevent eventual bankruptcy of the system. At what point this generation, or the next, will awaken and rebel and refuse to pay unfair, increasingly heavier taxes to cover the cost of relief payments for their parents, is anyone's guess.

We are told by the chief actuary of the social security system that the deficit will be made up in 1960 by these increases in the tax rate and by "trust fund" investment income. There exists a great deal of misunderstanding, due principally to the misrepresentations of the social security administration's propaganda, concerning the so-called "trust fund." The administration has misled the people into believing that their tax payments are held in a separate "trust fund" to guarantee "benefit" payments. This is an out-and-out falsehood. The administration's latest figures (May 1957) show the unfunded obligation of social security to be approximately \$300 billion, (this is in addition to the figure of \$270 billion national indebtedness). These obligations do not include the added costs of the increased benefits likely to be enacted in 1958. The "trust fund" is composed mostly of IOUs in the form of bonds, and little actual cash. The compulsory collected taxes have not been deposited in the fund, but have been spent for other services of government, such as foreign aid, relief programs, etc. Once collected, they

are transferred to the general fund and IOUs substituted for cash, for the most part, in the "trust fund." Such IOUs constitute a debt of government (you and I). The only way the government can pay this debt, since it has no income except that which it takes from its people in the form of taxes, is by collecting more taxes from its citizens, most of whom have already been taxed once for the social security IOUs. The "trust fund" is then nothing more than a lien against future taxes. The social security system must, at best, become more burdensome taxwise and the so-called income from investment which the planners tell us will wipe out the deficit by 1960 is nothing more than more of the government's power to tax.

This also serves to explain why the social planners are so anxious to "provide" for doctors and their families under the provisions of the Social Security Act. As shown, deficits must be made up out of increased taxes. To further delay the ultimate financial bankruptcy of the system as it stands today, more higher income bracket producers must be brought into the system whose higher taxes will reinforce it and conceal the true state of affairs for the time being. Physicians comprise the ideal group for this purpose. Almost all would pay maximum tax levies and very few would ever reap any return on their money. Eighty-five per cent of physicians between the ages of 65 and 72 are continuing in active, private practice, and thus would not be eligible for "benefits." A typical physician would be required to pay maximum social security taxes until age 72 without receiving any benefits. Social security retirement benefits are not of significant value or concern to the self-employed physician. Any survivorship benefits which might accrue to widows of physicians upon their death prior to age 72, we are reliably informed, can be purchased on a more practical and economical basis from private insurance companies.

Based on the amendments of 1954, for each 50 cents paid in taxes to social security, \$30 will be paid out in benefits. We, therefore, are mortgaging future generations to pay for a welfare state of this generation's concoction. A few examples will clarify more forcefully what the disparity in amounts paid in taxes versus benefits paid out really means. Let us reduce this to terms of a single individual whom we will assume started at age 21, in 1937 (when

social security deductions first went into effect) and was making the maximum taxable salary. At age 65, after having paid maximum taxes for 44 years, a total of \$4,221 will have been deducted from his salary and a like amount contributed by his employer for a total of \$8,422. If he and his wife live out their life expectancy, they will collect a total of \$22,494 in benefits. The difference of \$14,052 must be made up by other taxpayers, present or future. It is difficult to obtain reliable figures on social security statistics even from the Bureau of Old-Age and Survivors Insurance, Department of Health, Education and Welfare. Figures varying from \$6.2 billion paid in and \$5.7 billion paid out to \$5.7 billion paid in and \$5 billion paid out are quoted from the year 1956. Figures from \$55,600,000 to 69 million persons covered for the year 1956 have been given. Being conservative and lowering the \$14,052 deficit of the above illustration to \$10,000 and using the lower figure of 55,600,000 persons covered, present liability under the social security system *alone* (not including the national debt) amounts to \$556 billion — more than *twice* the estimated total wealth of the entire nation. This liability is not a static one, but is growing by leaps and bounds every day. However generous its motives, such a federal pension fund cannot go on forever incurring obligations which exceed its resources. We sincerely believe that most physicians will resist inclusion in such a scheme because it is presently unsound and can only lead to national bankruptcy; because it is creating an enormous debt to be paid by future generations, your children and grandchildren; and because we have no moral right to place such an obligation upon future generations.

Millions of small businesses and professional self-employed, ranging from doctors, lawyers, and accountants to salesmen and undertakers, have an opportunity to provide for themselves retirement income on a sensible, sound, basis during the year 1957-1958. It appears now that it is not so much of a question of whether the principle of tax deferment for the self-employed will be enacted during the next congressional session, as to what extent congress will limit the amount of savings the self-employed will be allowed to set aside (tax deferred) for old age. Tax deferment for the self-employed as embodied in the Keogh legislation deserves the enthusiastic and whole-hearted support of every

physician. Inclusion under the social security system should be fought vigorously and an educational campaign launched to acquaint doctors and the public with the dire consequences of continuance of the program as it is now constituted.

LOCATION OPPORTUNITIES

(Released October 4, 1957)

ASHFORK — Pop. 700 — North centrally located — Railroad center — Contact the Women's Club, Ashfork, Ariz.

BENSON — Excellent opportunity for GP — This David-Benson trade area has about 5,000 population with only one doctor available. A small sleep-in hospital can be set up very easily. Hospital 25 miles away. Chamber of commerce will furnish telephone answering service, nine to five. Contact Bernard Fisher, D.D.S., Medical committee of the chamber of commerce, Benson, Ariz.

CAMP VERDE — Located in the heart of a large farming and ranching area on the Verde River. Approximately 100 miles north of Phoenix. Badly in need of a medical doctor. Contact Ivy N. Moser, R. N., Camp Verde, Ariz.

FLAGSTAFF — Pop. 17,500 — Largest city in the north central Arizona trading area. One pediatrician is needed (as there are a number of general practitioners who would gladly refer work to him). Excellent opportunity for an EENT doctor and a general practitioner. Contact C. Herbert Fredell, M.D., Secretary, Coconino County Medical Society, 121 East Aspen Ave., Flagstaff, Ariz.

GILA BEND — Pop. 2,500 — 80 miles west of Phoenix — Nearest town to the Painted Rock Dam Project — Good opportunity for general practitioner. Cattle, cotton and general farming. Office and equipment available. \$150 monthly income from board of supervisors. Contact Mrs. J. F. Allison, Box 485, Gila Bend, Ariz.

HAYDEN — Pop. 4,000 — Located in southern Arizona. Need for a general practitioner. Have only one doctor available now. Mostly industrial area. Swimming pool, golf course, theater and social clubs. Has a local clinic, with Ray Hospital 24 miles away. Contact Charles B. Huestis, M.D., Box 928, Hayden, Ariz.

MIAMI — Opportunity for GP — Industrial hospital staffed by approximately seven doctors, who care for personnel and families of those

REFERENCES:

1. Social Security, Fact and Fancy, (Dillard Stocks), Henry Regnery Co., 1956.
2. Time, Aug. 26, 1956.
3. Dan Smoot Report, April 29, 1957; July 8, 1957.
4. JAMA, Vol. 164, No. 16, Aug. 10, 1957.
5. JAMA, Vol. 162, No. 3, Sept. 15, 1956.
6. JAMA, Vol. 162, No. 4, Sept. 22, 1956.
7. JAMA, Vol. 164 No. 18, Aug. 31, 1957.
8. Medical Economics, Aug., 1957.

who work for the three principal mining companies. This community is served by numerous small mining and ranching interests. Contact Robert V. Horan, M.D., Miami-Inspiration Hospital, Miami, Ariz.

MORENCI — Mining community located near New Mexico-Arizona border — Pop. 10,000 — Has vacancy at hospital for GP. Contact Carl H. Gans, M.D., Morenci Hospital, Morenci, Ariz.

PHOENIX — Good opportunity for associate radiologist in Phoenix area. Contact Ernest Price, M.D., 9112 No. 2nd Street, Phoenix, Ariz. (WI 3-3491).

SAFFORD — In need of GP — Pop. 6,000 — Has ideal year-around climate with good schools, park, swimming pool, golf course, Elks Club. Private hospital, open staff. Surgical privileges after six months if qualified. Completely equipped office for rent and equipment for sale. Contact M. T. Sandeno, M.D., 803 — 7th St., Safford, Ariz.

SAN MANUEL — Completely new mining community, just a nice drive from Tucson, Ariz. Urgently needs a physician to be associated with the copper mining company located there. Contact Francis M. Findlay, M.D., San Manuel Hospital, San Manuel, Ariz.

SHOW LOW — Pop. 1,500 — Trading center for some 10,000 people. Summer and winter recreation area, cool climate and beautiful forest country. At present there is no M.D. in Show Low and it wishes to locate a doctor there who would help establish a hospital. The town is anxious to locate a doctor and promises full co-operation. Contact either Mary and Eric Marks, Paint Pony Lodge, Show Low, Ariz., or Donald F. DeMarse, M.D., Box 397, Holbrook, Ariz.

TOLLESON — In need of GP — Serves a trading population of from 12,000 to 15,000. Ten miles west of Phoenix. Elementary and high schools, churches of all denominations. Complete office and equipment for GP available on reasonable term lease or purchase. Contact Mr. Norman Andersen, president, chamber of commerce, 9112 West Van Buren St., Tolleson, Ariz.

TUCSON — The VA Hospital is in urgent need of an orthopedic surgeon. They prefer someone who is board certified, but would take someone who has had special training, as they have the local men in this field available for consultation service. State license is necessary but not necessarily an Arizona license. Contact S. Netzer, M.D., Director, Professional Service, VA Hospital, Tucson, Ariz.

YOUNGTOWN — Pop. 130 — Located 16 miles from Phoenix and just a few miles from several small towns, each a potential field of practice. Most residents are 60 years of age or older and are in need of medical care. Office space is currently provided at no rental. A medical center is being planned. Interested doctors may contact Mr. Sid Lambert, Box 61, Marionette, Ariz.

LOCATION INQUIRIES RECEIVED DURING MONTH OF SEPTEMBER 1957

(Released October 4, 1957)

CALLAN, JOSEPH A., M.D., 98 Vermilion Drive, Virginia, Minn., *I*, age 28, married; 1954 graduate University of Minnesota; interned at Hurley Hospital, Flint, Mich. Wishes to locate in a town of 5,000 to 25,000 population. Interested in specialty practice or a general practice. Will also consider industrial practice. Available in three months.

DeGEORGE, FRANK, M.D., 287 Tremont St., Syracuse, N. Y., *Pd*, Age 30; 1955 graduate University of Tennessee; rotating internship at New York State Medical Center and affiliated hospitals, Syracuse. Will complete residency in pediatrics in June 1958. World War II veteran. Will consider any type of practice.

DEVENIS, ALGIRDAS M., M.D., 115 Vine St., Hartford, Conn. *Ob-Gyn*, age 32; 1953 graduate New York Medical College; rotating internship at Kings County Hospital; will complete Ob-Gyn residency at Hartford Hospital, Hartford, Conn., in July 1958. Interested in specialty work with clinic or associate type practice.

DOWLEN, JOSEPH A., M.D., 3040 Nevada, Minneapolis 36, Minn., *S*, age 38; 1944 graduate Southwestern Medical College; interned at Denver General Hospital and will complete resi-

FOR INFORMATION ON OPPORTUNITIES IN THE FIELD OF INDUSTRIAL MEDICINE, CONTACT:

Harold J. Mills, M.D., Phelps Dodge Hospital, Ajo, Ariz.

Carl H. Gans, M.D., Phelps Dodge Hospital, Morenci, Ariz.

Ira E. Harris, M.D., Miami-Inspiration Hospital, Miami, Ariz.

Charles B. Huestis, M.D., Box 928, Hayden, Ariz.

Elvie B. Jolley, M.D., Copper Queen Hospital, Bisbee, Ariz.

H. W. Finke, M.D., Magma Copper Company Hospital, Superior, Ariz.

John Edmonds, M.D., Kennecott Copper Corporation Hospital, Ray, Ariz.

Francis M. Findlay, M.D., San Manuel Hospital, San Manuel, Ariz.

dency at Minneapolis General Hospital in January 1958. Interested in assistant, associate or solo practice.

FINDLAY, PRENTISS E., M.D., Charity Hospital, New Orleans 12, *Pd*, age 28; 1954 graduate Emory University; presently in residency at Charity Hospital. Prefers practice in his specialty. Available July 1958.

FRIEDMAN, HERBERT S., M.D., 4504A Bonner Road, Baltimore, Md., *U*, age 29; 1952 graduate University of Illinois. Will complete residency in July 1958. Prefers assistant or associate practice.

LEHMAN, THEODORE H., M.D., University of Oregon Hospitals, Portland, Ore., *U*, age 31; 1953 graduate University of Nebraska. Now completing a 4-year residency. Prefers specialty in clinic or with associate. Available July 1958.

McCOWN, LOUIS K., M.D., 1516 - 3rd Ave. N.E., Rochester, Minn., *I*, age 33, married; 1949 graduate Tulane; internship at University of Wisconsin Hospitals; presently in residency at Mayo Clinic; interested in clinical, assistant or associate practice; available Jan. 1, 1958.

SCHULDES, RUDOLPH E., M.D., St. Elizabeth Hospital, 1044 Belmont Ave., Youngstown 4, Ohio, *Ob-Gyn*, age 35; 1951 graduate University of Basel; is now completing 3 years residency. Prefers clinical or associate practice. Available July 1958.

SOSHEA, JOHN W., M.D., 1015 Madison, Evanston, Ill., *I* and *Rheu*, age 32; 1949 grad-

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uate Northwestern; has had 3 years training and 2½ years practice time in internal medicine; interested in group practice; available now.

HIRD, WAYNE E., M.D., McGuire VA Hospital, Richmond, Va., TS and CS, married; 1950

graduate Kansas University. Qualified general surgery — taking boards this year. Will be qualified in TS and CS in July 1958. Wishes to practice only TS and CS in association with one or more private clinics.

COMMITTEE APPOINTED TO STUDY MEDICAL RESEARCH, EDUCATION

SECRETARY Folsom has named a special committee of medical leaders and industrialists to advise him on the "status and future needs" of medical research and education. He asked the members to study such questions as:

1. Impact of expanding research programs on medical education.
2. Availability of scientists, technicians, and facilities.
3. Relative emphasis given to research in the various disease fields.
4. Relative emphasis given to fundamental studies in the basic sciences generally.
5. Relationship between federal and private research programs.
6. Standards for approval of research projects.

Chairman of the committee is Dr. Stanhope Bayne-Jones, former Yale Medical School dean and more recently president of the New York Hospital-Cornell Medical Center joint administration board and head of medical research and development for the army.

Other members are: Dr. George Packer Berry, dean, Medical School, Harvard University; Thomas P. Carney, vice president, Eli Lilly and Company, Indianapolis; Dr. Lowell T. Coggeshall, dean, division of biological sciences,

University of Chicago and formerly special assistant to the HEW secretary; Fred Carrington Cole, vice president, Tulane University, New Orleans; Samuel Lenher, vice president, E. I. duPont de Nemours and Company, Wilmington; Dr. Irvine H. Page, director of research, Cleveland Clinic Foundation; Robert C. Swain, vice president in charge of research and development, American Cyanamid Company, New York; Dr. Stafford L. Warren, dean, School of Medicine, University of California Medical Center, Los Angeles; James Edwin Webb, president and general manager, Republic Supply Co., Oklahoma City, former undersecretary of state and former director of the bureau of the budget.

In announcing the committee, Secretary Folsom said:

"The medical research programs of this department and of the nation generally have expanded very rapidly over the past decade and have contributed substantially to advances in the health of the American people.

"We are deeply interested that our medical research efforts continue to make a maximum contribution based on wise policies and sound administration. In view of the increasing magnitude of the total medical research effort and how much is at stake in its progress or shortcomings, I have decided to appoint several distinguished consultants to review not only the department's activities in these fields, but the situation in medical research and medical education in the country as a whole."

COLOR ATLAS OF DERMATOLOGY, Vol. 4

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adapted from the original French edition, they include in exact detail every pertinent fact of the most minute clinical feature of the pathology illustrated. Because only a limited quantity of the color plates could be imported, the number of sets (and it can be sold only as a 4-volume set) of this Atlas is greatly limited.

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HOW TO SAVE FEDERAL INCOMES TAXES THROUGH THE USE OF A SIMPLE REVERSIONARY TRUST*

LeRoy B. Evans

President, Dow Theory Forecasts, Inc.

Hammond, Ind.

ONE of the doctor's most pressing financial problems today is his high federal income tax.

He would like to reduce it without reducing his earnings . . . and while this seems like "pie-in-the-sky," it can be done through the use of a simple reversionary trust with the income payable to and taxable to the beneficiary.

For years, trusts have been widely used for tax and other purposes; the reversionary trust is relatively new, however, and trusts that transfer the tax liability to the beneficiary are downright rare.

The reversionary trust differs from the standard trust in that the corpus (body) of the trust reverts back to the donor after a period that cannot be less than 10 years.

This enables an individual who does not need the income from certain investments to divert that income to a beneficiary for a period not less than 10 years, and, after that time, receive back his original investment.

Then, if the trust is properly drawn, the beneficiary is also made responsible for the tax which can mean the difference between a minimum 20 per cent tax which the trust would ordinarily pay, and no tax at all because of the beneficiary's normal tax exemption.

Thus, the simple reversionary trust becomes one of the most effective legitimate opportunities for a doctor temporarily to shift to others some of his investment income, and, more important, also the tax burden that goes with it.

Ideal for Parents

This simple reversionary trust is ideal for parents with young children who will later go to college and for those with dependents with little or no income of their own.

For example, on an investment yielding \$500 annually, a doctor in the 50 per cent bracket would have to pay \$250 tax . . . but his son or

daughter would not have to pay any tax at all if they received the \$500 and didn't have too much other income.

Since any taxpayer can have taxable income up to \$675 without having to pay any federal income tax, and because \$50 of the dividend income would be non-taxable, the annual dividend income to the beneficiary could be up to \$725 per year, reduced by income from other sources, if any, without his having to pay any federal income tax.

If the beneficiary is your child under 19 (or a child in school, regardless of age) and you furnish over half of that child's support, you would not lose the dependency exemption for that child because of the trust income. However, if the beneficiary is an adult dependent other than the above, then it is recommended that the beneficiary's gross income from all sources be less than \$600 per year to prevent loss of dependency exemption.

Here is a table showing how much more you would have to invest or how many times the rate of return you would need to accomplish results equal to this trust. (See page 705)

What to Use as Corpus of Trust

Practically anything can be used as the corpus or body of a reversionary trust. A mutual fund is very suitable as it provides a broad investment program in one security under the supervision and management of professional analysts; it is simple to use in a trust and since most funds are composed largely of common stocks, it also provides a hedge against inflation.

The value and dividends on the shares will increase or decrease with changes in market value and income of the investments in the fund, of course, but the management has the responsibility of managing the fund to meet the changing conditions, to the best of its ability.

This is very important since a reversionary trust must run a period not less than 10 years.

How Much to put in Trust

A trust can be written with a corpus of any amount from \$1 to \$1 million, or more. It all depends on how much income is to be diverted to the beneficiary. However, there is usually a minimum charge made for the administrative work of the trust officer, (usually \$25 or \$50 an-

*Reproduced by permission.

nually depending on locality and the policy of the bank) and therefore trusts of at least \$5,000 would seem advisable.

But whatever amount is used, the donor should proceed with care as any investment that results in lower taxes is usually carefully scrutinized by the internal revenue department; this is especially true of a trust such as discussed here which makes the income taxable to the beneficiary and not to the trust.

The simple reversionary trust holds important opportunities for tax savings but all benefits can be thrown away by a wrong sentence, phrase, or even a single inadvisable word in the trust instrument. This is truly a time when the phrase "investigate — then invest" is appropriate.

The least that any doctor wishing to consider such a trust should do is write us for further information before proceeding. There is no charge for this service.

| If your tax bracket is | Amount you would need to earn to clear \$600 after federal income taxes | Without this trust, you would have to invest the following number of times as much money (at any given rate of return) to clear the same amount (up to \$600 per year). | If you have a specified amount to invest, without this trust, you would have to earn the following number of times the rate of return to the trust to clear the same amount (up to \$600). |
|------------------------|---|---|--|
| 30 per cent | \$ 857.14 | 1.42 | 1.42 |
| 40 per cent | 1,000 | 1.66 | 1.66 |
| 50 per cent | 1,200 | 2.0 | 2.0 |
| 60 per cent | 1,500 | 2.5 | 2.5 |
| 70 per cent | 2,000 | 3.33 | 3.33 |
| 80 per cent | 3,000 | 5.0 | 5.0 |

WHAT DO YOU MEAN —
"NON-PROFIT"?

ONE of the chief distinctions between medically sponsored prepayment plans — such as Blue Shield — and the commercial health and accident insurance companies, is that Blue Shield is conducted on a "non-profit" basis, whereas the insurance companies are frankly business enterprises operated to earn a profit for their owners.

To state this difference is not to imply any criticism of either. The insurance companies have a long and honorable history of public service and they are an important part of America's business community.

Blue Shield, on the other hand, *serves largely as an agency of the medical profession, performing a community service.* Initiated by the medical profession, with the help of local industry, labor and civic leaders, Blue Shield is designed for one purpose only: to help people pay for medical services whenever the need for such services arises.

Blue Shield has succeeded in pioneering the medical care prepayment movement because the profession has guided it and supported it. Blue Shield's working capital was the pledge of the participating physician to deliver the medical

services that Blue Shield has promised on his behalf.

In some cases, the participating physicians have accepted a fraction of scheduled Blue Shield payments in order to tide an infant plan over its early trials. In every case, local professional leaders have given their local Blue Shield Plans incalculable hours of service as trustees and advisers. None has ever accepted one penny of compensation for such service as a committee member or trustee. As an agency of the medical profession, created for the sole purpose of facilitating the doctor's job of service to his patients, there has never been any need (for a third party) to make a profit out of the Blue Shield transaction.

Blue Shield's success is measured by the proportion of its income dollar that is expended for services to subscribers, the smallness of its operating costs and the quality of its doctor-support — *not* by the size of its reserves or its net earnings.

These earnings — these profits, if you will — belong to the subscriber.

"Non-profit" does not mean *no* profit. Much less does "non-profit" mean a profit-less operation. "Non-profit" in Blue Shield means that the earnings of the Plan belong to the subscribers who support the Plan.

Obituary



DR. DAVID ENGLE

DR. DAVID EDWIN ENGLE of Tucson died of a coronary occlusion, Sept. 28, 1957 at St. Mary's Hospital. Dr. Engle, 48 years of age, was born in Frankfort, Ind. He graduated from DePauw University in 1930 and received his M.D. degree at Indiana University in 1934. His internship and residency in medicine were spent at Indianapolis General Hospital in 1934-36. This was followed by a Master of Science in Medicine at Mayo Foundation Division of the University of Minnesota in 1939. He remained as first assistant on the staff of the Mayo Clinic until he entered private practice in Illinois in 1940

while instructing at the University of Illinois School of Medicine. From 1942-45 he saw active service in the Army of the U.S.A. as head of the department of cardiovascular disease for the General Base Hospital No. 32 in the ETO.

Dr. Engle came to Tucson in 1947 where he has practiced internal medicine with cardiology as his specialty. His offices were located in Medical Square. He was a Diplomate of the American Board of Internal Medicine, and a Fellow of the American College of Physicians. He was also a member of the American Medical Association, Arizona Medical Association, Pima County Medical Society, American Heart Association, Arizona Heart Association (president 1954-55), American Society of Internal Medicine, Arizona Society of Internal Medicine, Medical Society of United States and Mexico, and served as a director and vice-president of Arizona Blue Shield.

Dr. Engle was an active staff member of the three Tucson hospitals, having served as chief of staff at Pima General, as chief of medicine and as a member of the medical board of directors of Tucson Medical Center, and as chief of medical services and member of the governing staff of St. Mary's Hospital.

Dr. Engle was an elder in the Trinity Presbyterian Church, a member of Delta Upsilon, Nu Sigma Nu.

Dr. Engle is survived by his wife, Faith, of Tucson and a daughter, Suzanne, who is a sophomore at Colorado College, Colorado Springs, Colo.

Dr. Engle brought to Arizona medicine, in its stage of rapid expansion following World War II, excellent judgment and good treatment. We regret his loss.

Obituary

DR. JAMES KELVIN HAZEL

Dr. Hazel was born in Marysville, Mont. June 24, 1895. He received a Bachelor of Science degree from the University of Michigan in 1917, and a Master of Science degree from the same university, during the course of his studies for the medical degree which was received in 1925. He interned at the Fresno County General Hospital from 1925-26 and married Lenore Winterfield the following year. He worked for a time for the United Verde Copper Co. at Jerome, Ariz., and was affiliated with the Industrial Surgery Associated Indemnity Corp., San Francisco, Calif., for a time. Most of his private practice was performed around the Bay area. He was at San Mateo for 25 years. He served as ortho-

pedic surgeon with overseas duty in both World War I and World War II.

His last three years he served as staff physician for the Kennecott Copper Company at Hayden, Ariz. His professional affiliations included membership in the American Medical Association, the California State Medical Association, The Arizona Medical Association, and the Gila County Medical Society.

He was a member of the American Legion and the BPOE.

He was the father of six children. He died of coronary thrombosis on April 21, 1957, at Hayden, Ariz.

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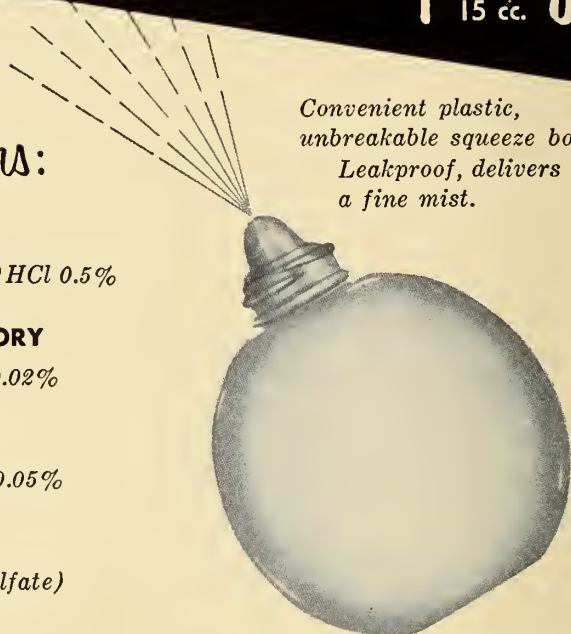
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Future Meetings

NOTICE

THE Medical Society of the United States and Mexico will hold its next meeting at the Pioneer Hotel, Tucson, Ariz., Dec. 5, 6, and 7, 1957. We strongly encourage your attendance at this meeting.

AMERICAN CANCER SOCIETY SEMINAR

Jan. 23 through 25, 1958

Tucson Inn

Tucson, Ariz.

PANEL

Axel N. Arneson, M.D., Onconological Gynecologist, 457 North Kings Highway, St. Louis 8, Mo.

James Barrett Brown, M.D., Plastic Surgeon, 508 North Grand Avenue, St. Louis 3, Mo.

Vincent F. Collins, M.D., Therapeutic Radiologist, Baylor University, College of Medicine, Houston, Texas.

Ross Golden, M.D., Diagnostic Radiologist, University of California, Medical Center, Los Angeles 24, Calif.

Cornelius F. Lehmann, M.D., Dermatologist, 705 East Houston Street, San Antonio, Texas.

Ian G. MacDonald, M.D., Oncological Surgeon, 2009 Wilshire Boulevard, Los Angeles 57, Calif.

Arthur Purdy Stout, M.D., Pathologist, Columbia University, College of Physicians and Surgeons, 630 West 188th Street, New York 12, N. Y.

E. Dale Trout, Ph.D., Physicist, General Electric Company, 4855 Electric Avenue, Milwaukee 1, Wis.

Thursday, Jan. 23 — 9:45 through 11:30 a.m.
SKIN TUMORS — Doctors Brown, Collins and Lehmann

1. Doctor Lehmann: "Diagnosis of Skin Cancer" 25 minutes. (Dr. Lehmann will please submit a list of lesions he would like to discuss)
2. Doctor Collins: "Radiotherapy of Skin Lesions" — 25 minutes.
3. Doctor Brown: "Surgical Treatment of Skin Lesions" — 25 minutes.

12-2 — Luncheon with round table discussion.
(cost included in registration fee)

Thursday, Jan. 23 — 2:30 through 4:00 p.m.

CANCER OF THE HEAD AND NECK — Doctors Brown, Collins, Golden, MacDonald and Stout.

1. Doctor Golden: "Roentgen Diagnosis of Diseases of the Sinuses and Larynx" — 15 minutes.
2. Doctor Stout: "Carcinoma in situ (Larynx)" — 20 minutes.
3. Doctor Brown: "Surgical Treatment of Cancer of the Head and Neck" — 20 minutes.
4. Doctor MacDonald: "Prophylactic Neck Dissection, Prophylactic Neck Irradiation. Surgery vs. Irradiation, Carcinoma of the Lip and Larynx" — 20 minutes.
5. Doctor Collins: "Radiotherapy in Cancer of the Head and Neck" — 15 minutes.

Friday, Jan. 24 — 9:30 to 11:00 a.m.

THE ABDOMINAL MASS — Doctors Golden, MacDonald and Stout.

1. Doctor Golden: "Diagnostic Procedures and Examples in Differential Diagnosis of Abdominal Masses" — 30 minutes.
2. Doctor Stout: "Pathology of Abdominal Masses" — 30 minutes.
3. Doctor MacDonald: "Surgery of Abdominal Masses, Including a Discussion of the Curability of Late Cancer" — 30 minutes.
4. Doctor Collins: "Radiotherapy of the Abdominal Mass" — 30 minutes.

Friday, Jan. 24 — 2:30 to 4:00 p.m.

PELVIC TUMORS — Doctors Arneson, Collins and Stout.

1. Doctor Arneson: "The Pros and Cons of Endometrial Carcinoma" (Surgery alone, irradiation alone, combined therapy) — 30 minutes.
2. Doctor Collins: "Cancer of the Ovary" — Therapy — ?Cobalt — 30 minutes.

12-2 — Luncheon with round table discussion.

Saturday, Jan. 25 — 9:30 through 10:15 a.m.

Mr. Trout: "The Application, Limitation and Dangers of Radiation Therapy" with some discussion of proper equipment, proper application, and in view of the recent publicity, some discussion, if possible, of radioactive fallout.

10:30 a.m. through 12

END RESULTS AND COMPLICATIONS —

Doctors Arneson, Brown, Collins, MacDonald and Stout.

1. Doctor Brown: "The Treatment of Lesions from Irradiation, Atomic Radiation and Cathode Ray Burns" — 15 minutes.
2. Doctor Arneson: "Carcinoma of the Cervix following Cervical Irradiation, End Results" — 15 minutes.
3. Doctor MacDonald: "End Results, 600 Cases of Carcinoma of the Breast" — 15 minutes.
4. Doctor Stout: "Results Following 2 M.E.V. Irradiation in Inoperable Lung Cancer" — 15 minutes.
5. Doctor Collins: "End Results and Complications Cancer of the Breast" — 15 minutes.

The American Academy of General Practice has approved the American Cancer Society seminar to be held at the Tucson Inn, Jan. 23-25,

1958, for a total of seven hours formal credit (Category I).

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by V. Mary Crosse, M.D. 4th ed. 181 pages. Illustrated. (1957) Little, Brown. \$5.

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PROGRESS IN GYNECOLOGY, Vol. 3

edited by Joe V. Meigs, M.D., and Somers H. Sturgis, M.D. 779 pages. Illustrated. (1957) Grune & Stratton. \$15.50.

Advances in the field since the publication of volume two in 1950 are recorded under the term "progress." Contributions of outstanding authorities provide current concepts under one cover.

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Phoenix Clinical Club

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL

PRESENTATION OF CASE NO. 41472

A 52-year-old man entered the hospital because of hoarseness.

The patient was in excellent health until three months before admission, when he began to feel "run down," weak and anorectic. Over the next two and a half months he lost approximately 10 pounds of weight. One month before entry he noticed the onset of a hacking cough productive of small amounts of nonbloody sputum. This was followed by the gradual appearance of hoarseness, which progressively increased up to the time of admission. An examination of the larynx done in the clinic revealed paralysis and fixation of the left vocal cord. A lateral x-ray film of the neck was normal. The patient was referred to the hospital for further study.

The past history was noncontributory. There was no difficulty in swallowing and no dyspnea, hemoptysis or pain in the chest. The patient had smoked one or two packages of cigarettes every day for many years.

Physical examination revealed a well developed man with evidence of recent weight loss. The voice was hoarse and rasping. The neck was normal, the chest was resonant, with a harsh late inspiratory wheeze in the right side. The heart was normal, as was the abdomen. There was marked clubbing of the fingers and toenails and no cyanosis.

The temperature was 97°F., the pulse 76, and the respirations 18. The blood pressure was 160 systolic, 85 diastolic.

Urinalysis was negative. Examination of the blood revealed a hemoglobin of 12.2 gm. per 100 cc. and a white-cell count of 8,400. A blood Hinton test was negative. The albumin and globulin were normal, and liver functions tests

were negative. An electrocardiogram was within normal limits.

An x-ray film of the chest showed a round mass protruding into the left-lung field just below the aortic arch. The mass appeared to lie in the anterior mediastinum and showed slight pulsations. The lungs were emphysematous, with depression and flattening of the diaphragm. The leaves of the diaphragm moved equally bilaterally. The anteroposterior diameter of the chest was increased. There was no mediastinal shift. The heart showed prominence of the left ventricle and the aortic arch. Fluoroscopy of the chest with multiple views of the lung fields showed no other masses. The mass previously described moved with the aortic arch in a manner suggesting that it was fixed to it. An angiogram revealed that the mass stated to be in the region of the left ductus node did not opacify as the dye went through the pulmonary vascular circuit and the aorta. The left-upper-lobe pulmonary artery was pressed upon by the mass, and there appeared to be some irregularity of the left upper posterior apical pulmonary artery, suggesting the possibility of attachment to the vessel wall. In the later films there appeared to be a compression upon the left lateral inferior aspect of the aortic arch by the mass.

Bronchoscopy revealed paralysis of the left vocal cord and questionable slight deviation of the trachea to the right. The right and left main bronchi and their lobar branches appeared normal. Bronchoscopic washings from the left main bronchus were negative for tumor cells.

On the 13th hospital day an operation was performed.

DR. JOHN A. EISENBEISS

The present case concerns a 52-year-old Caucasian male who entered the hospital because of hoarseness and was in excellent health until three months prior to admission, when he began to feel run down and weak. Additional complaints were cough of a hacking nature, without production of bloody sputum, present one month, weight loss of 10 pounds in the past 2½ months, and hoarseness which had been present one month and was progressive in nature. The pertinent physical findings were paralysis of the left vocal cords, a hoarse, rasping voice, and

inspiratory wheeze in the right chest, clubbed fingers and toes, normal heart, a blood pressure of 160/85.

Laboratory studies revealed a normal white count and hemoglobin, serology, liver function tests and electrocardiogram. X-rays revealed a round mass below the aortic arch, anterior-mediastinum, which pulsated somewhat. The heart was prominent, left ventricular shadow. Mass moved with aortic pulsation. Angiogram revealed no dye in the mass, however the left pulmonary artery was pressed upon by the mass. There was irregularity of the left upper posterior apical pulmonary artery, with compression of the left lateral inferior aspect of the aortic arch. There was some question of attachment of the mass to the aorta and irregularity of the upper posterior apical pulmonary artery, and questionable attachment to this vessel wall. Bronchoscopy corroborated the paralysis of the left vocal cord and there was a questionable deviation of the trachea to the right. Bronchial washings revealed no evidence of tumor cells.

The only neurologic sign is hoarseness with paralysis of the left vocal cord. This implies a lesion of the vagus nerve below its exit from the jugular foramen and at the origin of its recurrent laryngeal branch on the left side. Of interest is the course of the recurrent laryngeal nerve in that on the left it arises at the left of the arch of the aorta at the point where the ligamentum arteriosum is attached. This is a remnant of the obliterated ductus arteriosus.

The causes of recurrent laryngeal paralysis, statistically, in some 61 cases revealed that 28 of these were incident to aneurism in the arch of the aorta; four to mitral stenosis; six to enlarged bronchial and other adjacent glands, none incident to apical lung lesions; eight incident to malignant diseases of the lung; five new growths in the thorax; eight malignant disease of the esophagus; two thyroid tumors. Of 360 cases of recurrent laryngeal paralysis, 103 were toxic or infectious, 63 traumatic, including surgical trauma, 40 aneurisms of the arch of the aorta, 27 neoplasms, 12 tuberculosis, 10 goiter, 10 enlarged left auricle, four enlarged glands, 64 central causes, 27 other causes.

The mass as localized by my interpretation of the anatomical notes by x-ray and angiography, is that it is not of primary pulmonary origin, and is benign in view of the negative bronchoscopic findings and washings. If tumor had been pre-

sent, and a tumor of a malignant nature, temperature elevation, white count elevation, would very likely have been present.

Of further import is the presence of clubbing of the fingers and toes of marked degree, without cyanosis. This suggests pulmonary circulatory disease of some duration. Specifically, the recurrent laryngeal paralysis occurs as noted previously in aortic arch disease, 5 per cent; in malignant disease, 12 per cent; in new growths in the lung, 8 per cent; in enlarged bronchial and other glands, 10 per cent; in mitral stenosis, 6 per cent. Apical lung disease, esophageal, and thyroid disease can be excluded on the basis of the findings, symptoms, and examination.

Therefore, my diagnosis is aneurism of the arch of the aorta. Very likely, this aneurysm originated in or near the ligamentum arteriosum, or in a partially patent ductus arteriosus, with thrombosis formation accounting for the failure of filling on angiography; or my secondary impression, dermoid or thymoma.

DIFFERENTIAL DIAGNOSIS

DR. HELEN S. PITTMAN: The differential diagnosis of an anterior mediastinal mass is a guessing game at best, but a guessing game based on certain standard principles. The patient's illness began with weight loss, which is a general manifestation of disease. He had a cough, which is evidence of pressure, and hoarseness and paralysis of the left vocal cord, which suggest involvement of the left recurrent laryngeal nerve. In view of the negative bronchoscopy, I think the wheeze heard in the right side of the chest was not related to the mass but rather to emphysema. May we look at the x-ray films now? I understand that the angiogram cannot be demonstrated for it is a long roll that requires four people to hold.

DR. C. C. WANG: The x-ray films of the chest taken on admission show a soft-tissue density projecting into the left-midlung field. It lies somewhat below the aortic knob and apparently above the left main bronchus. There is no unusual calcification within it. On the lateral film this density lies somewhat anteriorly and has a very sharp border. On fluoroscopy it appeared to follow the aorta and could not be separated from it. The diaphragm moved well bilaterally. The heart is not enlarged, and the aorta shows some calcification in its arch. The lung fields are clear otherwise.

DR. PITTMAN: Do you know whether the pulsation in the mass was transmitted or intrinsic?

DR. WANG: Dr. Reeves fluoroscoped the patient; perhaps he can answer that.

DR. JOHN D. REEVES: The mass did not pulsate intrinsically, but by transmission.

DR. PITTMAN: Dr. Wang, do you suspect from the angiograms that this was a vascular lesion? Was an aberrant vessel demonstrated? What was the relation of the visualized vessels to the mass?

DR. WANG: The mass appeared to displace the vessels in the left upper pole, but was not opacified by the contrast medium.

DR. PITTMAN: Is there any suggestion of peripheral shadows in either lung?

DR. WANG: No; the peripheral lung fields are clear.

DR. PITTMAN: Is the mucosa of the esophagus normal in the barium-swallow examination?

DR. WANG: Yes; there is no intrinsic involvement of the esophagus.

DR. PITTMAN: I come down to the diagnosis of an anterior mediastinal mass situated below the aortic arch confined to the left side, and transmitting pulsation. It involved the left recurrent laryngeal nerve and was probably fixed to the arch of the aorta. It was in the region of the left ductus node and may have impinged on the artery to the left upper lobe. It seems to me that given that set of circumstances, the field of discussion narrows to either a vascular lesion or a malignant neoplasm. Involvement of the nerve in benign or inflammatory lesions is so rare as hardly to warrant consideration. First about vascular lesions, one has to consider aneurysms of the aorta. An aneurysm of the transverse aorta may involve the left recurrent laryngeal nerve, but this usually gives dysphagia as well as cough. This man had no difficulty swallowing. There are rare cases of aneurysm on the concave side of the ascending aorta that may appear anteriorly and to the left of the sternum in contrast to the usual position. However, if this mass did not opacify on the angiogram, I have to say that it was not an aneurysm. Moreover, an aneurysm would not explain the marked clubbing without cyanosis.

That brings me to malignant neoplasm. The fact that this man had severe clubbing and

nerve paralysis is strong evidence in favor of this diagnosis. Starting with the primary tumors, I believe the mass was not a primary bronchogenic carcinoma in spite of the history of heavy smoking. In view of the negative bronchoscopy and cytologic examination in the presence of a central lesion, there is no logical reason for making that diagnosis.

Lymphoma occurs in the mediastinum and is always a good guess when one does not know what the lesion is. Lymphoma, however, is more likely to be bilateral, although it can be localized to one side. This man had no recorded fever and no other enlarged lymph nodes so there is nothing on which one can make a reasonable diagnosis of lymphoma.

Coming to the other structures that occupy the mediastinum, I think one must consider a primary lesion in the esophagus. Although the esophagus comes in close contact with the aortic arch and left main bronchus, I do not see how I can make a diagnosis of a mass arising in the esophagus, when there is no dysphagia, no pain and an apparently intact mucosa.

Thymic tumor and teratoma both occur in the anterior mediastinum; it is always anyone's guess whether or not one of those is present.

I do not know enough about primary blood-vessel tumors to discuss them, and in the time I had I was unable to find any helpful information. So I shall leave them out.

That brings me to the metastatic neoplasms in the mediastinum. The most common sources for these are the lungs and breast. The male breast is an uncommon source, although tumors, when they occur there, are highly malignant. There was no mention of this man's breast. Since Dr. Wang said that the peripheral lung fields were clear, and the cytologic examination was negative, I do not have any grounds for making the diagnosis of a small peripheral lung tumor, such as an adenocarcinoma, which would explain the clubbing. The best conclusion that I can draw, then, is that this was a metastatic neoplasm in a lymph node from a distant focus that was not unearthed.

DR. EDWARD F. BLAND: Have you ever seen an aneurysm as silent as this?

DR. PITTMAN: No.

DR. BLAND: I wonder if someone could inform us about the difference between paralysis of the left vocal cord and fixation.

DR. WILLIAM R. WADDELL: Immediately on section of a recurrent laryngeal nerve, the cord becomes flaccid and extends to the midline. Later, as the degeneration of the nerve proceeds, the cord retracts laterally and becomes fixed in abduction. Actually, from the clinical point of view, I doubt if that helps us very much. There is considerable variation among individual cases.

DR. ROBERT E. SCULLY: Dr. Waddell, what was your pre-operative impression?

DR. WADDELL: Our pre-operative diagnosis was carcinoma of the lung. We had in mind the x-ray findings quite as firmly as Dr. Pittman. I think her points about the reasons that this mass was not a primary carcinoma of the lung are well made. The failure to visualize a tumor of central location by bronchoscopic examination is strong evidence indeed against bronchogenic carcinoma. With the pre-operative diagnosis we made, one may wonder why we felt obligated to operate on the patient. First, we had no histologic diagnosis, and when other considerations allow it, an attempt should be made to establish one. Secondly, although it is generally true that vocal cord paralysis with tumors of the lung is a sign of inoperability, in a few cases such tumors are resectable, particularly when the paralysis of the vocal cord has resulted from metastasis to a single lymph node.

CLINICAL DIAGNOSIS

Carcinoma of lung

Dr. Helen S. Pittman's Diagnosis

Metastatic carcinoma of unknown origin to mediastinal lymph nodes.

ANATOMICAL DIAGNOSIS

Arteriosclerotic aneurysm of concavity of aortic arch.

PATHOLOGICAL DISCUSSION

DR. WADDELL: When the chest was opened, the lung was found to be normal. It was immediately apparent that there was an aneurysm of the underportion of the aortic arch just below the origin of the left subclavian artery. The aneurysm was about the size and shape of a hen's egg; its wall was extremely thin and did not pulsate. There were plaques of atherosclerosis involving several areas of the aorta, particularly about the ostia of the left carotid and left subclavian arteries. The aneurysm, which was of the saccular type, had arisen in a similar plaque. The neck of the

aneurysm was small, and the tissue in that region was fairly firm in contrast to the thinned-out major portion of the sac. The dissection was extended to the point where clamps could be applied across the opening of the aneurysm. As often happens, during the dissection the aneurysm was punctured. This did not cause a hemorrhage, but 10 or 15 cc. of cloudy, thin fluid escaped. The reason for this and for the fact that the angiocardigram failed to demonstrate the aneurysm was that there was a dense clot in its opening; it lay like a cork in the opening and was easily lifted out. The clamps were applied to the mobilized aneurysm, the sac was excised, and the opening was closed without difficulty, except that the atheroma in the region made it technically difficult to place the sutures. The patient was discharged on the 10th postoperative day.

DR. SCULLY: The specimen of aneurysm wall sent to the laboratory showed severe atherosclerosis and mural thrombosis. There was complete destruction of the media, with fibrous-tissue replacement. No changes suggestive of a syphilitic etiology were seen.

DR. PITTMAN: I think it is unfortunate that we could not see the angiocardigrams because the questions I asked Dr. Wang about the relation of the mass to the visualized vessels are pertinent in retrospect.

DR. BLAND: How was the nerve at operation?

DR. WADDELL: The vagus nerve was stretched out, and there was tension not only on the recurrent laryngeal nerve, but also on the vagus nerve itself. We have discussed the possibility that the patient's ill health for two months was produced by traction on the vagus nerve.

DR. BLAND: A feature that interests me is whether or not the paralysis of the vocal cord cleared. It is too early, I suppose, to know. I have seen paralysis of the vocal cord of six months' duration with mitral stenosis that disappeared after commissurotomy.

DR. SCULLY: Dr. Wang, how often do you see a malignant tumor that is fixed to the aortic arch appeared to move with the aorta?

DR. WANG: I think that is not an uncommon finding.

Woman's Auxiliary

CONVENTION REPORT

THE 27th annual convention of the Women's Auxiliary to the Arizona Medical Association met in Yuma, April 10 through 13, 1957.

This was quite an event for Yuma. Not since 1937 has a state medical convention been held here.

The women's registration totaled 94. We were honored to have as our guest the national president of the women's auxiliary, Mrs. Robert Flanders, from Manchester, N. H.

The business sessions started Wednesday morning, April 10, with the meeting of the nurse's loan committee, and the nominating committee convening.

A board luncheon meeting followed at the Flamingo dining room, with Mrs. Oscar Thoeny, president, presiding. The school of instruction followed with Mrs. Jesse Hamer giving instruction to the incoming officers.

A civil defense film was shown at 5:30 p.m., at the Stardust by Mrs. John Kennedy, civil defense chairman.

The Blue Shield hosted the doctors and wives with a delightful cocktail party and poolside buffet Wednesday evening.

Thursday morning a general business session was held at the Flamingo dining room. All reports of the committee chairmen were heard, and election of officers was held.

A memorial service was given by Mrs. James Moore, chaplain, for Mrs. Philip Corliss, who had been active in state and local auxiliary work for many years. Mrs. Lamar Harper, also an active member of the Yuma County Medical Auxiliary, was remembered.

Coffee and rolls were available throughout the business meeting.

Thursday noon a luncheon was held at the Yuma Country Club. Seventy-five members and guests attended. Our honored guest, Mrs. Robert Flanders, national president, spoke on the theme of the Women's Auxiliary: "Health is our Greatest Heritage."

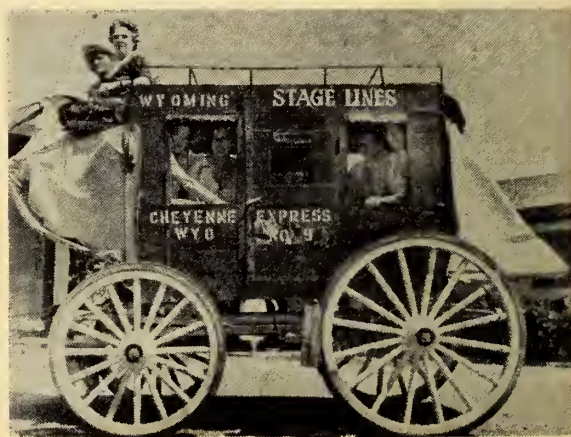
The tables were beautifully decorated with white wrought iron baskets of spring flowers. Each lady received a single carnation corsage.

Drug companies were responsible for the other nice favors provided for our members and guests. Guests at the head table were: Dr. and Mrs. Robert Flanders, Dr. Carlos Craig, Dr. A. I. Podolsky, Dr. Charles Powell, Dr. Melvin Phillips, and Rev. Charles Crawford.

Thursday afternoon at 4:30 p.m., a style show was held around the pool at the Stardust, with fashions shown by King's and the Smart Shoppe, of Yuma. Among the many models were six of our Yuma doctors' high school daughters.

Thursday evening, following the reception and dinner hour, the Yuma County Medical Society entertained by providing an orchestra for dancing. Concluding the evening was a midnight buffet.

Friday morning was the highlight of the Womens' convention, with an All-Western Brunch. Squaw dresses were the mode of the day. Western regalia decorated the Country Club, including bales of hay. Red and white checked tablecloths were topped by Western straw hats filled with sunflowers. Vitamins



STAGECOACH DAYS — Members of the Women's Auxiliary to the Arizona Medical Association are showing their national president Mrs. Robert Flanders of Manchester N. H., how things are done in Arizona. The stagecoach transported the ladies from the Stardust Hotel to their luncheon at the Yuma Country Club in the traditional manner of the Old West. Shown from left to right are: Mrs. Charles Powell, Yuma, new state president; Mrs. Oscar Thoeny, Phoenix, retiring president; Mrs. Dwight Murray, Napa, Calif.; Mrs. Flanders, and Mr. Fred Fairbanks, perched on top.

were had in the form of tomato juice *with* or *without*.

An old-time stage coach transported our high officials from the Stardust to the country club. Mrs. Flanders, wearing her first squaw dress, chose to ride on top with the driver.

Our state champion teenage square dance group, The Country Cousins, delighted the ladies attending with many unusual versions of Western and folk dancing.

Members of the Yuma auxiliary fashioned cor-sages of screw beans; these unusual beans are found on our Yuma desert. Other favors were supplied by the various drug companies.

We were honored at the brunch to have as our guest, Mrs. Dwight Murray, wife of the American Medical Association president, from Napa, Calif.

The county presidents' reports were given during the short business meeting and the new officers were installed by the national president, Mrs. Robert Flanders. Officers are as follows:

- President, Mrs. Charles Powell
- President-elect, Mrs. Melvin Phillips
- First Vice president, Mrs. Hiram Cochran
- Second Vice president, Mrs. Robert Stratton
- Treasurer, Mrs. Ian Chesser
- Recording secretary, Mrs. Clare Johnson
- Corresponding secretary, Mrs. Ralph Irwin
- Director, one year, Mrs. Oscar Thoeny
- Director, one year, Mrs. John Stanley
- Director, two years, Mrs. William E. Bishop

Our new state president, Mrs. Charles Powell, was presented the president's pin and gavel by Mrs. Oscar Thoeny, past president. A short inaugural address was given by Mrs. Powell. One thought she left with us: "that we must ever be cognizant of the basic aims and objectives of the auxiliary and its parent bodies, the local medical society, the state association, and the American Medical Association."

A short post-convention board meeting was held immediately following the brunch.

At 2:30 p.m., a golf tournament was held with 10 ladies participating. Mrs. Roy Hewitt won low gross, Mrs. Kent Thayer low net, and Mrs. V. A. Toland low putt.

The President's Dinner Dance was held Friday evening in the Stardust Planet Room. High-lighting the evening was the presentation of plaques to four 50-year members of the Arizona Medical Association: Dr. Meade Clyne of Tucson, Dr. Martin G. Fronske of Flagstaff, Dr. J.

Newton Stratton of Safford, and Dr. Clara S. Webster of Tucson. Following were two fine talks by Dr. Dwight Murray, AMA president, and Dr. Phillip Thorek, guest speaker from Chicago.

Guest speakers' wives attending the convention were:

- Mrs. Dwight Murray, Napa, Calif.
- Mrs. Alber Bower, Pasadena, Calif.
- Mrs. Henry Brainerd, San Francisco, Calif.
- Mrs. Leon Goldman, San Francisco, Calif.
- Mrs. Joseph Holmes, Denver, Colo.
- Mrs. Raymond Lanier, M.D., Denver, Colo.
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SERIOUS PENICILLIN REACTIONS INCREASING, FDA REPORTS

REPORTING on a nationwide survey of more than four years, food and drug administration physician told the Fifth Annual Symposium on Antibiotics that the number of serious reactions to penicillin has been increasing annually. Dr. Henry Welch, chief of the FDA division of antibiotics, made the report.

Since 1945, Dr. Welch said, isolated reports of penicillin reactions with a relatively high percentage of fatalities have been appearing in medical literature. The survey, covering the principal antibiotics, showed a substantially higher number of reactions to penicillin than to other antibiotics.

In the survey, 3,419 case histories of severe reactions were classified, but 424 were excluded because of insufficient data. One third of the reported reactions to all antibiotics were classified as life-threatening and about nine-tenths were attributed to penicillin.

"The trend of increase in serious reactions, especially from penicillin given by intramuscular injection," the FDA says, "shows there should be a clear-cut indication of need before the drug is administered. The study of case histories indicates that there has not been indiscriminate use of penicillin by physicians." At one point Dr. Welch points out that the number of reactions to penicillin is still small when considering that millions of persons receive it each year and that it has saved tens of thousands of lives. He said the increased incidence of reactions is to be expected in the wise use of a highly antigenic substance.

In connection with the symposium, a group of physicians and pharmacologists discussed a new product that was described as an antidote to penicillin poisoning.

"WHO" SCIENTISTS REPORT

A GROUP of WHO scientists reports that "all man-made radiation must be regarded as harmful to man from the genetic point of view," a conclusion also reached by congress' Joint Atomic Energy Committee two weeks ago.

BOOK REVIEWS

THE EYE IN GENERAL PRACTICE

by C. R. S. Jackson, F.R.C.S. 152 pages. Illustrated. (1957) Williams & Wilkins. \$5.

The purpose of the volume is threefold: (1) To describe the common diseases of the eye; (2) to show how dangerous diseases of the eye may be recognized; and (3), uniquely, to help general practitioners to grasp the significance of reports submitted by ophthalmologists. The text is lucid and the illustrations, most of them in full color, are lifelike. It could be dedicated to all who want a synopsis of ophthalmology in relation to the body as a whole.

Stacey's Medical Books, San Francisco.

SPONTANEOUS AND HABITUAL ABORTION

by Carl T. Javert, M.D. 450 pages. Illustrated. (1957) Blakiston-McGraw-Hill. \$11.

The author presents the observations from more than 20 years of clinical practice and research in a detailed study of 2,000 spontaneous and habitual abortion specimens, analyzed from clinical, obstetric, and pathologic viewpoints. Special attention is given to psychosomatic and phantom abortion and their therapy. There are 94 tables and 196 illustrations with an extensive bibliography.

Stacey's Medical Books, San Francisco.

MANAGEMENT OF THE PATIENT WITH HEADACHE

by Perry S. MacNeal, M.D., Bernard J. Alpers, M.D., and William R. O'Brien, M.D. 145 pages. (1957) Lea & Febiger. \$3.50.

A well integrated triumvirate of internist, neurologist, and psychiatrist, work together on a sensible and contemporary clinical topic. The result is a readable, helpful, and inexpensive guidebook. Headaches appear under these headings: local intracranial lesions, tensions, psychogenic, vascular, and extracranial. From Philadelphia, the cradle of American medicine, this is for anybody, anywhere.

Stacey's Medical Books, San Francisco.

MARTIUS' GYNECOLOGICAL OPERATIONS

edited by Milton L. McCall, M.D. and Karl A. Bolten, M.D. 7th ed. 405 pages. Illustrated. (1957) Little, Brown. \$20.

This practical manual, restricted to operating room technique, covers established gynecological procedures by description and illustrative detail. The seventh edition expands the section on the correction of sterility, abbreviates the section on urinary incontinence, omits ultraradical Brunchwig-type procedures, and presents few techniques (e.g., subtotal abdominal hysterectomy) not in line with usual current American practice.

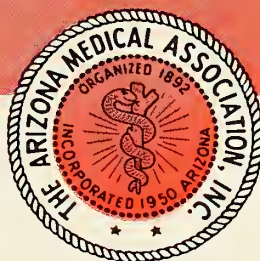
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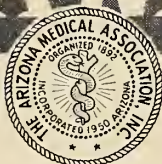
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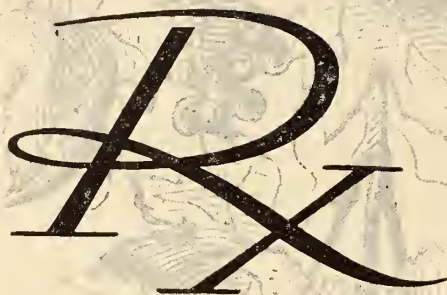
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Original Articles

CUTANEOUS NEOPLASMS*

By Donald J. McNairy, M.D.

Phoenix, Arizona

THE selection of the subject "Cutaneous Neoplasms" was prompted by the personal observation that patients often seek a dermatologist regarding a new growth following lack of interest or indifference displayed by their examining doctor.

It has frequently been demonstrated that inconspicuous cutaneous changes, because they are plainly visible, are as much a source of concern to the individual as the more prominent medical or surgical indications may be to the physician. This attitude of concern may be explained, in part, by the ever increasing dissemination of medical information through newspaper, radio and television, thus stimulating apprehension, cancer-consciousness, and even cancerphobia among many.

The importance of early recognition and differentiation of the various cutaneous tumors should not be minimized. Statistics tell us that 5,000 United States citizens die yearly of skin cancer. Errors in early diagnosis, inadequate attention to small cutaneous lesions when overshadowed by other complaints, and improper skill and judgment in evaluation and management undoubtedly are largely responsible for

this total. It is my belief that with our present knowledge and methods of therapy, many of these deaths should be preventable.

The following classification is obviously not detailed nor complete. Instead, it is presented for the average practitioner, in the practical sense, to facilitate clinical differentiation between those common new growths of purely cosmetic consideration and those possibly, potentially, or frankly malignant. The accompanying discussion will be, for the same reason, brief but pointed, with little or no reference to other than the most commonly encountered tumors or neoplasms.

I. Benign Neoplasms

A. Epidermal

1. Nevus (common mole)
2. Verruca Senile (seborrheic keratosis)

B. Dermal

1. Fibroma—dermatofibroma;
cutaneous tag
2. Lipoma
3. Keloid (cicatrix)

C. Vascular (angioma)

1. Hemangioma—capillary (Port wine);
simplex (strawberry); cavernous
2. Lymphangioma
3. Pyogenic Granuloma

* Presented with illustrations and certain modifications at the Sixty-Sixth Annual Meeting of the Arizona State Medical Association at Yuma, Arizona, April 12, 1957.

II. Precancerous Neoplasms

- A. Senile Keratosis—cutaneous horn
- B. Leukoplakia
- C. Bowen's Dermatitis
- D. Paget's disease of the nipple
- E. Arsenical Keratosis

III. Malignant Neoplasms

- A. Basal Cell
- B. Squamous Cell
- C. Melanoma

In discussing benign epidermal neoplasms, first, briefly, let us consider nevi. These tumors, common to all, may develop during infancy and continue to form throughout early and mid adult life. The average adult has from a few to several hundred such lesions. They may be flat, papular or pedunculated, and vary in color from normal flesh pink to deep brownish black. Although the dreaded malignant melanoma arises chiefly from these benign structures, the incidence is extremely rare, perhaps one in several million. Which should be removed? Probably the best brief criterion to follow is that any nevus subject to repeated trauma or irritation is safest eliminated. Also, the junctional nevus undergoing active changes in adult life should be thoroughly removed. Although "junctional" is a histopathological term, this type of nevus can frequently be clinically recognized as a flat or slightly elevated new growth showing evidence of deep or irregular pigmentation change which frequently extends beyond the actual tumor confines to produce an irregular, fuzzy border. In addition, it is well to remember that the greatest percentage of melanomas are found on the extremities, genital area, head, neck and trunk in that order.

Seborrheic keratoses or seborrheic verrucae are the most common true benign neoplasms to appear in mid or later adult life. They occur mainly on the trunk, particularly the shoulders, and on the scalp and face. Ordinarily, they develop as small yellowish or brownish raised lesions, covered by a thin greasy scale, sharply margined, suggesting a "stuck on" appearance. Multiple lesions are the rule. Some may enlarge to considerable size or become deeply pigmented, but unless secondarily irritated, exhibit no tendency toward inflammatory reaction around the lesion.

Benign dermal neoplasms, while commonly

seen, seldom are diagnostic or therapeutic problems. Soft fibromas, or cutaneous tags, are frequently found on the neck and body folds of adults. Reassurance is needed, and those cosmetically objectionable or subject to irritation may be removed. Hard fibromas represent fixed, shot-like hyperpigmented nodules, usually on the extremities, particularly the lower leg. Removal is optional, but if decided upon, should be by excision, thus avoiding unsightly scars or delayed healing. Lipomas seldom prove diagnostic dilemmas, and reassurance is usually sufficient. The keloid results from an unusual tendency to produce hyperplastic scar tissue. It is a frequent source of discomfort and concern to those in whom it occurs. Opportunity to effect improvement, usually by irradiation, is in direct proportion to the age of the neoplasm.

The vascular group of new growths, appearing chiefly in infancy, are common to all. While a "wait and see attitude" is frequently justified, remember that every parent wishes a perfect child, and a rapidly enlarging tumor is a considerable source of concern. Radical therapy is seldom indicated. Early consideration of refrigerant, electrosurgical, or minimal irradiation measures may eliminate anxiety, stop tumor growth, and reduce residual scar formation as well. The pyogenic granuloma is a rapidly growing vascular tumor which frequently appears following a minor irritation or injury with secondary infection intervening. The lesion may be crusted, bleed freely, has a special predilection for scalp, lips or fingers of young individuals, and is easily treated by electrodesiccation or cautery.

Precancerous Neoplasms

This tumor group deserves clinical recognition since it is classified as pre-malignant, in that 15 to 25 percent eventually terminate in skin cancer. It is particularly in this group that early diagnosis, avoidance of irritation, and appropriate "prophylactic" removal therapy can reduce the overall incidence of cutaneous malignancy.

Senile keratoses are lesions produced by a peculiar hyperplastic epithelial change of the skin or muco-cutaneous junction. They are confined almost exclusively to the exposed body surfaces of elderly persons, or at an earlier age in individuals of English, Irish or Scotch descent, with a tendency to freckle instead of tan. Such persons are said to develop senile cutaneous changes

prematurely. If they choose an occupation which exposes the skin to the elements—sun, wind and rain, the cutaneous degenerative changes become more pronounced. In contrast to prevailing belief, senile keratoses are often inconspicuous. Excepting those occurring on the dorsum of the hands or the vermilion border of the lower lip where hyperkeratosis may be more pronounced, they frequently represent flat plaques, scarcely raised above the skin level. They may be erythematous, slightly atrophic, with adherent yellowish scale and irregular indefinite margins. Often palpation is required to demonstrate their presence.

The cutaneous horn is a special type of senile keratosis in which keratin remains adherent, producing a narrow, elongated cylindrical excrescence. Commonly located on the ear or about the face, the erythematous base is not infrequently the development site of early anaplastic squamous cell carcinoma.

Leukoplakia is the mucous membrane analogue of senile keratosis. It is characterized by an irregular white or gray plaque, occurring on the lip or buccal surface of the oral cavity, or on the genital mucosa. In the absence of thickening or ulceration, observation stressing the avoidance of possible sources of irritation is in order. Infiltrative changes, fissuring or ulceration always demand immediate removal.

Briefly mentioning the more rare precancerous entities, Bowen's dermatosis on the trunk may resemble psoriasis or nondescript scaling erythematous plaques, frequently multiple. The diagnosis is microscopic with "in situ" changes within the epidermal layers assuming early malignant features. These lesions may remain quiescent for years before invasive malignancy develops. Any persistent eczematoid eruption of the breast, areola or nipple area should be watched, since Paget's disease of the skin may be a possibility. If not responding to the usual therapy, or with infiltration developing, biopsy study is indicated, since associated proliferation of the lacteal ducts, and later, carcinoma of the breast may appear. Fortunately, the administration of trivalent arsenicals in the form of Fowler's solution is no longer prevalent, since this substance has been responsible for pigmentary cutaneous changes, punctate keratoses of the palms and soles, and an increase in tendency toward cutaneous malignant degeneration of these lesions later in life.

Malignant Neoplasms

Basal cell cancers develop from the basal cell layer of the epidermis. They are characterized by slow evolution, persistent tendency toward local recurrence after operative removal, and progressive invasion, even to involve cartilage and bone. They may extend by way of irregular pseudopods, "iceberg fashion," below the epidermis. They occur chiefly on the face, especially about the nose, forehead, eyelids, temples and upper lip. The early lesion is usually a discrete pinhead to pea size, waxy or pearly nodule which extends irregularly to form a plaque. Frequently a scale or crust appears, the removal of which causes bleeding. Then, with a series of crustings and removals, ulceration forms.

The squamous cell cancer originates from the prickle cell layer of the skin, frequently from a senile keratosis. The surface may be dry and wartlike, superimposed upon a dull red base. The lesion grows rapidly. The margins are quite raised, and the center becomes a level plateau, the surface being either ulcerated, flat or covered with cauliflower-like vegetations. Areas of predilection are the lower lip, genitalia, extremities and scalp. Extension is chiefly into adjacent tissue, but may go to the regional lymph nodes.

Squamous cell lesions are more numerous in male subjects and have a tendency to appear a little earlier in life than the basal cell variety.

Summary

It is acknowledged that your patients, the general public, are becoming more informed, cancer-conscious, and more concerned over cutaneous neoplasms.

The brief classification and the accompanying discussion should be of assistance in early clinical recognition of these new growths.

Earlier clinical differentiation, better judgment, and improved therapy techniques should substantially reduce the present skin cancer mortality rates.

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SURGICAL TREATMENT OF OTOSCLEROSIS

By D. W. Frerichs, M.D.

Phoenix, Arizona

DURING the past nineteen years a notable advancement has been made in otological surgery pertaining to the treatment of deafness. These surgical efforts have been directed toward a pathological condition known as otosclerosis which produces a bilateral conductive deafness. Medical journals, lay magazines and newspapers have carried numerous and often dramatic articles relative to this subject, many of which are poorly documented and give a misleading impression of the benefits derived from surgical treatment.

It appears that a discussion of the current status of the surgical treatment of otosclerosis might be of value to the general physician and to specialists remote from otolaryngology. Often a physician, regardless of his field of endeavor, is confronted with a patient suffering from a hearing loss, and it behooves one to be familiar enough with current progress in this field to advise or direct the patient. In an area with a scattered population, familiarity with a few otological techniques in diagnosis may save a patient considerable time and money. The physician may sometimes prevent a great disappointment to a patient with nerve deafness by gently subduing the patient's hopes which have been whipped up by a current magazine article, or he may direct a patient who is unfamiliar with modern development in ear surgery to a new life with normal hearing.

Pathology

Otosclerosis is a pathological osseous abnormality which occurs in the petrous bone in possibly 10 per cent of the adult population¹. However, symptoms are not manifested unless the osseous changes encroach on the footplate of the stapes², penetrate the cochlea, or obstruct the round window of the vestibule. The common area involved that produces symptoms is the anterior margin of the footplate of the stapes. Fixation of this ossicle prevents a normal tympanic membrane from transmitting sound waves to the cochlea. The ankylosis of the stapedial footplate may be compared with the fusion of a joint by rheumatoid arthritis. The histopathology is different, but the functional loss is the same. The rocking piston action of the stapes is prevented, and

sound cannot reach the inner ear except by bone conduction. Complete uncomplicated fixation of the stapes usually results in a hearing loss of 40 to 50 decibels. This is considerably below the level needed to comprehend normal conversational voice.

History

The patient with otosclerosis usually notices the hearing impairment between the ages of 20 and 30 years. A family history of a similar type of deafness in a parent or near relative is often elicited. The person with otosclerosis may or may not have had the usual number of childhood ear infections. The deafness is insidious in onset and may develop rapidly in a few years or slowly produce symptoms over a decade. A constant tinnitus is often present. Vertigo is usually absent. The disease shows a predominance in females. Pregnancy may accelerate the symptoms. A patient will often state that hearing seems better in a noisy environment, as when riding a train or an airplane. Many patients are wearing hearing aids at the time of their examination, and although they may profess dissatisfaction with the instrument, they will admit that hearing is improved by sound amplification.

Examination

The patient with otosclerosis is soft-spoken, as his bone conduction is normal and he hears his own voice clearly. The ear drums have a normal appearance except for advanced cases which may reveal an odd reddish line in the posterior-superior quadrant. This phenomenon is due to increased vascularity of the otosclerotic bone behind the drum, and is known as Schwartz's sign. If a Siegal otoscope is inserted in the ear canal, alternate positive and negative pressure reveals normal mobility of the ear drum. The eustachian tubes are patent when insufflated.

Placing a tuning fork with a frequency of 512 d.v. or even 1024 d.v. alternately in front of the auditory meatus and then on the mastoid process reveals that bone conduction is louder than air conduction (negative Rinne test). A 256 or 512 tuning fork placed on the vertex of the skull or on the incisor teeth reveals equal referral of the sound to both ears or referral to the ear with the

greatest hearing loss (Weber test). If the intensity of the examiner's voice is raised sufficiently, the patient should comprehend almost all spoken words. This latter test often differentiates from nerve deafness in which increased loudness does not improve understanding of spoken words to the degree experienced by otosclerotics who usually have normal nerve function. Audiometric examination reveals a characteristic flat line for air conduction with near-normal bone conduction. X-rays of the mastoids are usually negative. A sclerotic mastoid does not contraindicate surgery.

Other tests may be necessary for selection of surgical candidates. However, these may be reserved for the otologist, as they require special equipment and training in interpretation.

Treatment

I. Fenestration Operation.

No medical treatment has ever proved of value in otosclerosis. Prior to surgical developments, recommendation of the hearing aid was the only beneficial advice a physician could offer.

In 1938, Dr. Julius Lempert² developed the first practical approach to the surgical correction of otosclerosis. The fenestration operation had previously been performed by others, but the surgical method devised by Lempert resulted in a one-stage operation that brought about a marked increase in successful results as compared with previous work. This operation is basically a by-pass procedure, and sound is conducted into the inner ear by creating a new window in the bony labyrinth.

Numerous refinements have been made in technique⁴⁻⁵⁻⁶⁻⁷, and the percentage of permanently successful cases expected from surgery has reached eighty per cent. Almost all of the properly selected cases will obtain satisfactory improvement, but within a year a small number have closure of the fenestra by bony regrowth. The number of closures has been greatly reduced by improvements in the method of developing the fenestra. Antibiotics and vestibular sedatives have resulted in minimal post-operative complications.

Case Report:

The audiometric examination of one of my cases shows the pre- and post-operative hearing in a typical otosclerotic patient on whom I operated in January, 1956. The improvement in hearing was satisfactory and has been maintained to date.

In fenestration surgery, the patient's hearing cannot be returned to absolute normal as the mechanical advantage of the ossicular chain is lost. The patient obtains serviceable hearing for normal conversational voice. A hearing aid is

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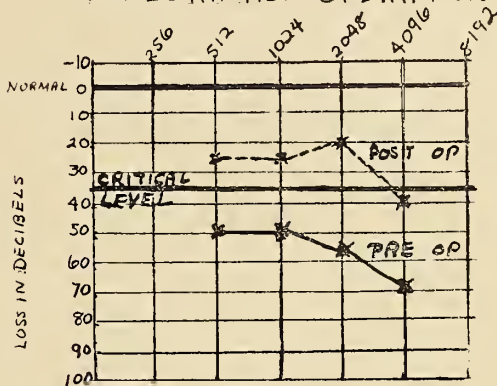


FIG. 1

Forty-one year old male. Fenestration operation performed on left ear, January, 1956. Note post-operative hearing gain as compared with pre-operative level. No hearing aid is needed, as hearing in speech range is above critical level of 35 decibels.

not needed. However, on audiometric testing a loss of 20 to 25 decibels is noted.

II. Stapes Mobilization

In 1953, Dr. Samuel Rosen⁸ reported successful attempts at mobilization of the ankylosed stapes in otosclerosis. Dr. Rosen utilized an approach to the middle ear involving the development of a tympano-meatal flap. This provided a direct approach to the stapes, and with the use of magnifications and special instruments, successful lysis of the otosclerotic fixation was accomplished. With the refinements introduced by Rosen in approaching the stapes via the external ear canal, the operation has become a practical procedure.

Mobilization is attempted first by transincudal methods, then via the capitulum, or the footplate when necessary. Goodhill⁹, House, Shambaugh, and Fowler¹⁰ have all reported methods which facilitate restoration of stapedial motion. The success of surgery varies slightly with the operation, but approximately 60 per cent of the patients¹¹ are receiving adequate gains in hearing.

The stapes mobilization procedure requires only a few days' hospitalization. It is a short operation and is performed under local anesthesia. This allows checking the hearing to confirm successful mobilization prior to closure of the tympano-meatal flap. The patient is restored to complete activity within three days and the ear is

healed in less than two weeks. Complications are minimal. The operation often restores the patient to his maximum cochlear reserve as the ossicular chain is left intact and continues to function normally. The hearing in many cases reaches the previous bone conduction hearing level.

Considering the mechanism of hearing loss due to otosclerosis, one would expect a high percentage of recurrence of fixation of the stapes after successful surgery. This is apparently not the case, for reasons unexplained, and less than 2 per cent of the patients with adequate hearing gains suffer a subsequent return to pre-operative levels. However, as the procedure has been performed for only four years, the long-term results may show a greater number of post-operative fixation of the stapes.

Case Report:

The pre- and post-operative audiometric examination on a patient with clinical otosclerosis is recorded below (Fig. 2). I performed this surgery in June, 1957, and the hearing gain has been maintained to date. The patient left the hospital the same day surgery was performed. The following day she was able to carry on with her usual household duties. The ear was completely healed in 10 days.

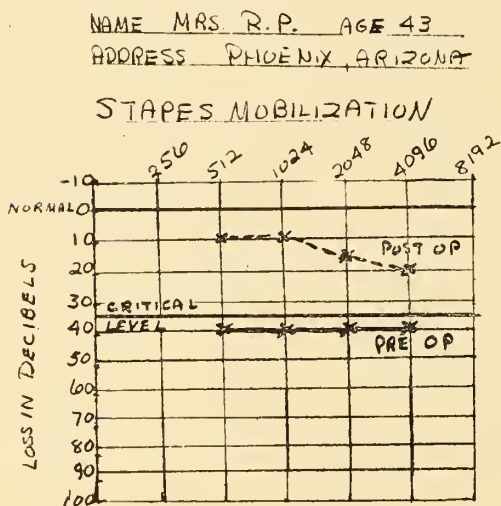


FIG. 2

Forty-three year old female. Stapes mobilization performed on left ear in June, 1957. Note post-operative hearing gain as compared with pre-operative level. A hearing aid is no longer needed as hearing is well above the critical level for conversational voice.

Discussion

The fenestration operation has a higher incidence of success than the stapes mobilization procedure, but it is becoming the practice in most medical centers to perform the stapes mobilization operation initially. The expense to the patient, the period of hospitalization, and the

post-operative care is much less formidable with stapes mobilization than with fenestration surgery. The procedure allows direct visual confirmation of the diagnosis, and if the stapes cannot be mobilized, a fenestration operation may be performed after the tympano-meatal flap has healed.

The criteria for selection of cases is less rigid with stapes mobilization than with fenestration surgery. If the bone conduction in the speech range is above 30 decibels, stapes mobilization may be of value, while in fenestration surgery most operators prefer that the bone conduction be near normal levels. However, the fenestration procedure offers hearing improvement to certain congenital ear malformations with hearing loss, while stapes mobilization is of no value in these cases.

Summary

Patients with deafness due to otosclerosis can be greatly improved by several surgical procedures. At present it appears that the stapes mobilization operation should be attempted initially in most cases. By submitting to this relatively simple procedure the patient has a fair chance of gaining a great improvement in hearing. If stapedolysis is unsuccessful and the patient's hearing by bone conduction is near normal levels, a fenestration operation may be performed at a later date. Although the fenestration operation is difficult and the post-operative treatment is somewhat prolonged, a high percentage of success is now obtainable.

It appears that post-operative fixation of the stapes is rare after stapes mobilization is successfully obtained during surgery. As the operation is new, the percentage of re-ankylosis cannot be determined at this time.

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LO QUE se presenta es el producto del estudio, comenzado en 1932, sobre pacientes con gota y artritis gotosa. En todos esos años se han hecho grandes adelantos en el diagnóstico y en el tratamiento. En la actualidad muchos médicos pueden hacer un diagnóstico correcto en la primera visita, lo mismo si el enfermo ha tenido muchos ataques que si se encuentra en el medio del primero. Hace 20 años no era raro que el paciente fuera visto durante largo tiempo sin que se precisara el diagnóstico correcto. Esto representa un gran adelanto en la educación médica.

Existe una gran uniformidad de opinión entre la mayoría de los médicos en cuanto al tratamiento que debe hacerse en el ataque agudo. El plan que debe seguirse después de este ataque, sin embargo, varía en diferentes clínicas. Las diferencias son más claras en lo relativo al empleo de dietas especiales y de alcohol.

Es necesario precisar tres expresiones que se aplican a casos en que hay un exceso en la concentración del ácido úrico del suero: (1) *la hiperuricemia* es un aumento asintomático del ácido úrico sérico; (2) *la gota* existe cuando el paciente tiene trastorno hereditario del metabolismo del ácido úrico, con o sin antecedentes de artritis gotosa o de tofos visibles; (3) la expresión *artritis gotosa* se aplica a los casos de gota que tienen un ataque típico de artritis que aparece de súbito y desaparece completamente en 4 a 14 días.

El límite superior de la concentración normal de ácido úrico en el suero es de 6 mg./100 cm.³ por el método empleado en Búfalo. Si es mayor, debe pensarse en gota.

Cuando en el paciente sospechoso de gota exista una concentración normal del ácido úrico en el suero puede ser que eso se deba a que:

(1) El paciente haya tomado probenecida, salicilato o cualquier otro agente uricosúrico en las últimas 24 horas.

(2) Los reactivos estén descompuestos (más de 30 días de preparados).

(3) El análisis lo haya hecho un técnico sin experiencia.

Debe señalarse que el 5% de los pacientes en el Hospital General de Búfalo tiene un aumento de ácido úrico en el suero, aunque en ellos no se haya hecho diagnóstico de gota ni de artritis gotosa. Estos son los que se clasifican como casos de hiperuricemia.

ÁCIDO ÚRICO:

Los seres humanos normales eliminan por la orina aproximadamente 700 mg. diarios de ácido úrico. Este ácido úrico representa el producto de oxidación final de los compuestos de purina. La mayoría de este ácido úrico se deriva de los compuestos de purina que existen en el organismo; pero la excreción urinaria de ácido úrico aumentará si se ingieren alimentos ricos en purina (hígado, mollejas, anchoas, etc.). Normalmente, en los líquidos orgánicos existen en solución unos 1000 mg. de ácido úrico; este es el total de ácido úrico mezclable. Diariamente se reemplazan 0.75 de este total; esta es la proporción de reemplazo del ácido úrico orgánico. En el gotoso, el total disuelto se duplica, o más, y la proporción de reemplazo disminuye. Los depósitos sólidos de urato (tofos) en el gotoso ordinariamente no se consideran como parte de ácido úrico mezclable.

URICOLISIS:

En la mayoría de los mamíferos, excepto el hombre y algunos de los primates, existe una enzima llamada uricasa que transforma por oxidación el ácido úrico en alantoina. Nunca se ha demostrado de modo concluyente que esta enzima se encuentre en tejido humano. Generalmente se cree que este tejido no puede oxidar el ácido úrico para transformarlo en alantoina o en otros productos. Se sabe que una dosis intravenosa de ácido úrico iotopo puede ser recuperada solo en parte en el ácido úrico urinario; pero también se ha visto que algo del isótopo se elimina por la bilis y puede encontrarse en las heces. Algunos estudios sobre isótopos sugieren que la uricolisis (Desintegración del ácido úrico) puede ocurrir en el hombre. Existen

otros investigadores que sostienen que el ácido úrico se segrega en la bilis y se desintegra en el intestino, donde da productos que se reabsorben.

PURINAS:

Como puede verse en el esquema, una purina es un cuerpo con anillo doble que tiene cuatro átomos de nitrógeno. Las purinas corrientes, además del ácido úrico, son la adenina, la guanina, la hipoxantina y la xantina. Esta última puede presentarse en derivados metilados como cafeína, teofilina y teobromina. Las purinas pueden presentarse combinadas con una molécula de azúcar para formar un nucleosido, o con una molécula de azúcar y otra de ácido fórfico para formar un nucleótido.

PIRIMIDINAS:

Estas tienen una estructura equivalente a la mitad de la de la purina; tienen anillos de seis miembros con dos átomos de nitrógeno. Las pirimidinas, como las purinas, forman también nucleosidos y nucleótidos. El producto final de su desintegración es urea más bien que ácido úrico.

"ANR, AND":

Estas siglas corresponden a ácido nucleico ribósico y ácido nucleico desoxirribósico respectivamente. Tales cuerpos son mezclas de peso molecular elevado compuestas de nucleótidos de la purina y de la pirimidina. Se asocian con proteína para formar nucleoproteína, la cual está relacionada íntimamente con la estructura y la función celular. El AND, cuyo azúcar es la desoxirribosa, se encuentra principalmente en el núcleo celular; el ANR, cuyo azúcar es la ribosa, y que tiene una ligera diferencia en su composición pirimidínica, aparece sobre todo en el citoplasma de la célula. Las nucleoproteínas constituyen la sustancia fundamental de los cromosomas y, por tanto, actúan como portadoras de las características hereditarias. Forman también el medio para la formación de nuevas enzimas. Los virus son moléculas grandes de nucleoproteínas que no tienen vida, pero que, en presencia de células vivas, pueden dar lugar a otras moléculas de la misma configuración. Es indudable que el crecimiento de los tejidos y el cáncer están relacionados con el metabolismo nucleoprotéico, pero todavía no se conoce exactamente la relación que existe entre ellos.

PRECURSORES DEL ÁCIDO ÚRICO Y DE LA PURINA:

No es indispensable suministrar purina al organismo, ya que este puede sintetizarla partiendo de moléculas sencillas, tales como la de glicina (aminoácido no esencial), añadiéndole grupos de otras moléculas como puede verse en el esquema. Se sabe que en la conversión de la glicina en purinas aparece como uno de los cuerpos intermedios la carboxamida 4-amino-5-imidazola o su ribotida o ribosida; ahora se están descubriendo otros intermediarios. Los alimentos ricos en purina liberan purinas que pueden ser convertidas en ácido úrico. Las purinas de los alimentos pueden usarse, o no, para la formación de ácido nucleico orgánico. A los que padecen de gota generalmente se les prohíben los alimentos ricos en purinas; pero esto no provoca más que un descenso ligero en la producción de ácido úrico, de modo a que este puede originarse por distintos procedimientos. Todavía no se conoce bien que influencia ejercen otras sustancias de la dieta, como la grasa o el alcohol; pero estas pueden prohibirse en los casos de gota, de acuerdo con la experiencia clínica.

FOSFATOS DE GRAN ENERGÍA:

La oxidación orgánica de los alimentos produce energía química, térmica y mecánica. Tal cosa, de acuerdo con la naturaleza del tejido orgánico, no es tan simple como hacer un fuego debajo de una caldera de vapor o quemar la gasolina en una máquina de combustión interna. Es necesario almacenar y liberar cuidadosamente la energía producida por el catabolismo de los alimentos; esto se logra por la fosforilización oxidativa, que da lugar a diversos productos; entre los más importantes de ellos se encuentran el trifosfato de adenosina y otros cuerpos análogos de purina y pirimidina.

Cuando se hace una historia clínica cuidadosa a menudo se encuentra que la frecuencia de gota en la familia es elevada; muchas veces no se halla esto en la primera visita, pero se descubre procediendo cuidadosamente y consultando con los familiares. Los antecedentes personales dados por el enfermo son característicos cuando ha tenido varios ataques de artritis y se ha recuperado completamente de cada uno de ellos.

En el cuadro típico de artritis gotosa los síntomas agudos se presentan en pocas horas. Si la artritis no se trata en lo absoluto, o no se trata

del modo apropiado, por lo regular desaparece completamente dentro de 4 a 14 días. Este cuadro hace el diagnóstico.

Cualquier articulación puede afectarse, pero atacadas mas frecuentemente son la del dedo gordo o la del tobillo; es raro que se afecte la articulación de la cadera o la del hombro.

El comienzo de la gota es rapido, apareciendo el dolor máximo a las pocas horas, en tanto que la artritis reumatoidea y la osteoartritis se van desarrollando insidiosamente a traves de varios días o semanas. En la gota las articulaciones son asintomáticas entre los ataques, cosa no sucede en las otras dos enfermedades citadas.

En una articulación gotosa típica aparecen tumefacción, enrojecimiento, sequedad y *extremada* sensibilidad; al cabo de una semana puede presentarse descamación de la piel.

En la articulación del dedo gordo, que es la que se afecta con mas frecuencia, la sensibilidad es extrema en su cara interna, no en la dorsal ni en la plantar.

Cuando estan afectados el tobillo o el pié, el aspecto se muy semejante al de la celulitis.

En otras articulaciones la enfermedad no tiene un aspecto característico.

Tofos son los depósitos de cristales de urato de sodio en cartílagos, huesos o debajo de la piel. Los sitios en que se encuentran mas a menudo son el borde de la oreja y los huesos de las manos y los pies, cerca de las articulaciones. Es raro que se encuentren tofos visibles a menos que la enfermedad haya existido por largo tiempo y que la concentración del ácido úrico sea mayor de 7, 5 mg. por 100 cm.³

Un tofo que contenga cristales de ácido úrico *garantiza* el diagnóstico de gota.

Es frecuente que un medico vea un enfermo con artritis en el cual el diagnóstico no este claro. Para precisar si existe o no artritis gotosa, se usa la prueba terapeutica con dosis grandes de colchicina por via oral: 0,5 mg. cada hora hasta que aparezcan náuseas o heces blandas. En los casos de *artritis gotosa* normalmente esto hace desaparecer por completo los síntomas articulares en 24 a 36 horas.

Existen otros medicamentos que pueden producir alivio; pero no son específicos de la

artritis gotosa. Los mas importantes de ellos son la fenilbutazona, la cortisona, el ACTH y la prednisona.

En general, el tratamiento del ataque agudo de artritis gotosa resulta satisfactorio tanto para el paciente como para el médico, ya que la recuperación completa se logra rápidamente en comparación con lo que sucede en otras formas de artritis. La terapia de dicho ataque debe instituirse lo mas pronto posible.

Existen diversos tipos de tratamiento para estos casos:

(1) *La colchicina* sólo sigue siendo el medicamento más empleado. Se administra por vía oral en dosis de 0, 5 mg. cada hora hasta que aparezcan náuseas o heces blandas, en cuyo momento hay que suspenderla para que no se presenten diarreas.

La colchicina, despues de las dosis terapeuticas, debe seguirse administrando indefinidamente dos veces al día.

(2) *La fenilbutazona* (Butazolidin) ha producido resultados excelentes en muchos casos. La dosis corriente es de 200 mg. cada 2 horas hasta dar tres o cuatro dosis; el tratamiento, pues, es de un solo día. Con cada dosis se dá una tableta de colchicina; puede considerarse que en estos casos la colchicina actua como catalizador. Esta asociación de medicamentos nos ha dado mejores resultados que cualquiera de ellos usado sólo. Después de la remisión del ataque agudo la colchicina debe darse indefinidamente dos veces al día.

(3) Otro método eficaz para la terapia de la artritis gotosa es administrar *ACTH*, inyectando sea 100 unidades intramuscularmente o sea 20 unidades por goteo intravenoso en un periodo de 6 horas. Esto se usa en los enfermos refractarios a la terapia oral. Conjuntamente se da ese día tres veces 0, 5 mg. de colchicina, y se sigue despues con colchicina dos veces diarias por tiempo indefinido.

Durante el ataque agudo el régimen alimenticio debe limitarse a uno rico en carbohidratos, con poca grasa y con los líquidos adecuados. Deben suprimirse la carne, el pescado y las aves hasta que desaparezca el ataque. Sobre el empleo del alcohol existen diversas opiniones.

En el tratamiento de la gota despues del

ataque agudo se siguen algunos principios generales. Antes que nada, se da Benemid (probencida) para aumentar la eliminación de ácido úrico, lo cual hará descender la concentración del ácido úrico en el suero a 35%. Esto contribuye a evitar la precipitación de ácido úrico; en pacientes que la han tomado durante largo tiempo han desaparecido los tofos. Dicho medicamento no previene aparición de artritis gotosa aguda ni es de valor en el tratamiento de esa afección. Muy pocas reacciones han ocurrido mientras se ha estado administrando Benemid. A su administración pueden seguir, ocasionalmente, dolores genitourinarios; pero desde que empezó a usarse, en Noviembre de 1950, no se han observado reacciones importantes.

La dosis corriente es de dos tabletas diarias; sin embargo, en algunos casos hay que dar solamente 0,5 g., mientras que en otros deben utilizarse dosis de 3 g. diarios. La concentración conveniente del ácido úrico en el suero parece ser de 4, 5 a 5, mg. por 100 cm.³

Ademas, se da 0.5 mg. de colchicina dos veces

al día. Regularmente no se observan reacciones. Se usa para hacer abortar ataques ligeros. Si aparece un ataque agudo, se sube la cantidad para dar dosis terapéuticas totales. Muchos pacientes han tomado colchicina durante 5 a 10 años sin ninguna reacción. Hemos observado que la colchicina, en esta dosificación, disminuye la frecuencia de los ataques.

DIETA:

Debe darse, en general, una dieta rica en carbohidratos, de poca grasa y adecuada en proteínas. Deben suprimirse el hígado, el riñón y las mollejas, debido a que contienen gran cantidad de purina. Si los ataques son determinados por ciertos alimentos específicos, habrá que suprimir estos. La dieta debe regularse de modo que se mantenga el peso ideal para la edad y el desarrollo del enfermo.

Alcohol (?)

Los ejercicios moderados parecen ser beneficiosos para el enfermo de gota; desde luego, el tipo de actividad debe depender del estado general del paciente.



GOUT AND GOUTY ARTHRITIS

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THE MATERIAL presented is the result of the study of patients with gout and gouty arthritis which began in 1932. The progress in diagnosis and treatment over the years has been great. Now many physicians are able to make the correct diagnosis at the time of the *first visit*, whether the patient has had many attacks, or is in the midst of his first bout. Twenty years ago it was not unusual for a patient to be seen over a period of many years before the correct diagnosis was determined. This alone is representative of one great advance in medical education.

There is great uniformity of opinion among most physicians as to the method of treatment of the acute attack. However, the program to follow after the acute attack varies in different clinics. These differences are most apparent regarding the use of special diets and also alcohol.

When the serum uric acid level is increased, there are three terms which must be defined: (1) *Hyper-uricacidemia* is an asymptomatic increased blood serum uric acid. (2) *Gout* exists when a patient has an inherited disorder of uric acid metabolism in which there may or may not be a history of gouty arthritis and/or visible tophi present. (3) *Gouty arthritis* applies to the patient with gout who has a typical attack of arthritis, coming on suddenly and disappearing completely within 4-14 days.

By the method used in Buffalo to determine the serum uric acid level, the upper limit of normal is 6 mg./100 ml. Above that level gout is suspected.

If, in the patient with a presumptive diagnosis of gout, there is a normal serum uric acid, any one of three conditions may exist:

(1) Probenecid, salicylates, or any other uricosuric agents have been taken within 24 hours.

(2) Reagents may have deteriorated (more than 30 days old).

(3) An inexperienced technician may have performed the test.

It is of interest to note that five per cent of patients at the Buffalo General Hospital have an increased serum uric acid, even though there is no established diagnosis of gout or of gouty

arthritis. These people are classified under the heading of hyperuricacidemia.

URIC ACID:

Normal humans excrete approximately 700 mg. of uric acid in their urine daily. This uric acid represents the final oxidation product of purine compounds. Most of this uric acid is derived from the purine compounds present in the body, but foods rich in purines (liver, sweetbreads, anchovies, etc.) will increase the urinary excretion of uric acid. The normal human has approximately 1,000 mg. of uric acid in solution in his body fluids. This is called the miscible pool of uric acid. The pool is replaced at the rate of about .75 pools per day. This is called the turnover rate of body uric acid. In the gouty individual, the pool size is increased two-fold or more, and the turnover rate is reduced. The solid deposits or urate (tophi) in the gouty individual are usually not considered as part of the miscible pool of body uric acid.

URICOLYSIS:

Most mammals except man and some of the primates oxidize uric acid to allantoin by means of an enzyme called uricase. It has never been proved conclusively that this enzyme is present in human tissue, and it is generally believed that human tissue cannot oxidize uric acid to allantoin or other products. It is known that an intravenously injected dose of isotopic uric acid can only be partially recovered in the urinary uric acid, but it has also been shown that some of the isotope is excreted via the bile and can be recovered in the feces. Some isotopic studies suggest that uricolysis (uric acid breakdown) can take place in the human. Other investigators hold that the uric acid is secreted in the bile, broken down in the intestine, and the breakdown products reabsorbed into the body proper.

PURINES:

A purine is a double ring compound having four nitrogen atoms, as portrayed in the scheme shown. Common purines, in addition to uric acid, are adenine, guanine, hypoxanthine, and xanthine. The latter compound can occur in methylated derivatives such as caffeine, theophylline, and theobromine. The purines can occur in combination with a sugar molecule forming a

nucleoside, or in combination with a molecule each of sugar and phosphoric acid, forming a nucleotide.

PYRAMIDINES:

These are equivalent to half the purine structure. They are six-membered rings with two nitrogen atoms. Like the purines, they also form nucleosides and nucleotides. The end product of their breakdown is urea rather than uric acid.

"RNA, DNA":

These abbreviations stand for ribose nucleic acid and deoxyribose nucleic acid. These compounds are high molecular weight mixtures of purine and pyrimidine nucleotides. They associate with protein to form nucleoprotein. Nucleoprotein is intimately involved in cell structure and function. DNA, which has deoxyribose as its sugar moiety, is primarily found in the cell nucleus. RNA, which has ribose as its sugar and a slight difference in its pyrimidine composition, is primarily found in the cytoplasm of the cell. Nucleoproteins are the stuff of chromosomes and thus act as carriers of hereditary characteristics. They are probably also the templates for new enzyme formation. Viruses are large molecules of nucleoprotein which are non-living per se, but which can reproduce more molecules of the same configuration in the presence of living cells. Tissue growth and cancer are undoubtedly related to nucleoprotein metabolism, but the exact relationships are as yet unknown.

URIC ACID & PURINE PRECURSORS:

The body does not need preformed purine. It can synthesize purine from simple molecules such as glycine (a non-essential amino acid) by adding groups from other molecules as shown in the scheme. A compound, 4-amino5-imidazole carboxamide, or its ribotide or riboside, is known to be an intermediate in the conversion of glycine to purines. Other intermediates are also being discovered. Purine-rich foods yield purines which can be converted to uric acid. Food purines may or may not be used for body nucleic acid formation. Purine-rich foods are usually forbidden in the diet of a gouty patient, but the decrease in uric acid output is only slight because of the other routes of formation of uric acid. The influence of other dietary items such as fat or alcohol are poorly understood at present, although they may be prohibited in the diet of the gouty patient on the basis of clinical experience.

HIGH ENERGY PHOSPHATES:

The body oxidizes food to obtain chemical,

thermal, and mechanical energy. Because of the nature of body tissue, this process is not as simple as building a fire under a steam boiler or exploding gasoline in an internal combustion engine. The energy from the catabolism of food must be carefully stored and released. This is accomplished by oxidative phosphorylation, and some of the most important compounds in this process are adenosine triphosphate (ATP) and other similar purine and pyrimidine compounds.

CLINICAL DATA:

The incidence of gout in a family is often found to be high when careful case histories are recorded. Many times such data are not available at the first visit, but with more careful thought and consultation with relatives, pertinent facts are recalled. The personal history given by the patient is characteristic when repeated attacks of arthritis have occurred, with complete recovery following each attack.

The typical pattern of gouty arthritis shows the acute symptoms coming on within a few hours. When the arthritis is untreated or inadequately treated, it usually subsides in 4-14 days with no residues. This pattern is diagnostic.

The sites involved are most often the big toe or the ankle, but any joint may be affected. It is rare for the hip joint or the shoulder joint to be involved.

The onset of gout is measured within a period of a few hours to the point of intensive pain, whereas rheumatoid arthritis and osteoarthritis most often begin insidiously over a period of several days or weeks. In gout the joints become symptom-free between attacks, but not so in rheumatoid or osteoarthritis.

In a typical joint there is swelling, redness, dryness and *extreme* tenderness. Scaling of the skin may follow within a week.

The big toe joint, which is most often involved, is extremely tender on the medial aspect — not on the dorsum or sole of the foot.

When the ankle or foot are involved, the condition closely resembles cellulitis.

Other joints when involved do not have a characteristic appearance.

Tophi are deposits of sodium urate crystals in cartilage, bone or under the skin. The most frequent place to find them is in the margins of the ears or in the bones of the hands and feet, close to the joints. It is unusual for visible tophi

to be present unless the disease is of long standing and the uric acid level is above 7.5 mg. per cent. A tophus which contains uric acid crystals is absolutely diagnostic of gout.

The therapeutic test of full doses of oral colchicine is used to establish the presence or absence of gouty arthritis. Colchicine is given -0.5 mg. at hourly intervals until nausea or a loose bowel movement occurs. Complete recovery of joint symptoms usually occurs in patients with gouty arthritis within 24 to 36 hours.

There are other drugs which may give relief, but they are not specific for gouty arthritis. The most important of these are phenylbutazone, cortisone, ACTH and prednisone.

The treatment of the acute attack of gouty arthritis is usually satisfactory both to the patient and physician, as complete recovery occurs quickly when compared with other forms of arthritis. These methods must be used as early as possible during an attack.

Several types of treatment are available:

(1) *Colchicine* alone remains the most widely-used drug. It is given in a dose of 0.5 mg. orally, every hour, until nausea or a loose bowel movement occurs. It must then be stopped or diarrhea will ensue.

After the therapeutic dosage has been given, colchicine should then be continued twice daily indefinitely.

(2) *Phenylbutazone* (Butazolidin) has been spectacular in many instances. The usual dosage employed is 200 mg. every two hours for three or four doses. This is a one-day treatment. One tablet of colchicine is given with each dose. The action of colchicine here could be explained as that of a "therapeutic catalyst." In our experience, the action of the combination is superior to either agent used alone. After the acute attack has subsided, colchicine should be given twice daily indefinitely.

(3) Another effective method to treat a patient with gouty arthritis is to administer *ACTH*, using either 100 units intramuscularly, or to give 20 units by intravenous drip over a six-hour period. This is given to the patient who is refractive to the above oral type of therapy. At the same time, colchicine 0.5 mg. is given three times that day. It is followed by using colchicine twice daily for an indefinite period.

During an acute attack, the diet should be limited to one which is high in carbohydrates, low in fat, and with adequate fluids. Meat, fish

and fowl should be omitted until the attack is over. Alcohol is a debatable question.

In the treatment of gout, following the acute attack, a few general principles are carried out. First of all, probenecid "Benemid" is given to increase the uric acid excretion. It will lower the level of the serum uric acid by 35 per cent. By this means, it tends to prevent the deposition of uric acid in the body. Tophi have disappeared in patients who have taken it over a long period of time. Probenecid "Benemid" does not prevent the occurrence of acute gouty arthritis, nor is it of value in the treatment of acute gouty arthritis. Very few reactions have occurred while it is being administered. Occasionally, genito-urinary pain will follow its administration, but no serious reactions have been observed since it was first used in November, 1950. The usual dosage is two tablets per day. However, in some cases, it is necessary to give only 0.5 gram, while in others, the dosage may be increased to 3 grams daily. The desirable level of serum uric acid seems to be between 4.5 and 5.5 mg./100 ml.

In addition, colchicine 0.5 mg. is given twice daily. Usually no reactions are observed. It is used in an attempt to abort mild attacks. If an acute attack does occur, the dosage is stepped up to full therapeutic levels. There are many patients who have taken colchicine over a period of 5-10 years without any untoward effects. It is our observation that colchicine in this dosage diminishes the frequency of attacks.

DIET:

In general, it should be one which is high in carbohydrates, low in fat and adequate in protein. Liver, kidney and sweetbreads should be omitted due to their high purine content. If specific foods precipitate attacks, these should be interdicted. The diet is to be regulated so that an ideal weight for age and body weight is maintained. — Alcohol (?)

Moderate exercise seems to be beneficial for patients with gout. Naturally, the patient's general condition should govern the type of activity.

CONCLUSION:

With present day treatment, consisting of colchicine and phenylbutazone (Butazolidin) given promptly, attacks of acute gouty arthritis are of short duration. Also, with daily maintenance administration of colchicine and probenecid ("Benemid"), future attacks are decreased and tophus formation prevented.

SPEECH CORRECTION FOR THE BUSY PHYSICIAN

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SPEECH is the principal means by which human beings express their feelings, share experiences, and interchange ideas. Except for tactile sensations, speech affords the most intimate means of personal inter-relationship for all human beings. Therefore, the need for speech assumes the force and status of a "basic drive." Whenever this basic drive for speech is frustrated by a speech disorder, the result is the growth of numerous deviant symptoms, including aggressiveness, hostility, and resentment. The frustrated individual with a speech disorder learns to adapt to his environment with inefficient and often hostile defense mechanisms. Since hostile defense mechanisms are not primarily rewarding, the individual most generally shifts to less-threatening behavior, which is characterized by withdrawal, shame, embarrassment, inferiority, and insecurity. Speech does not occur in a vacuum, but in a very complex social matrix which presents numerous problems. This paper will attempt to discuss these problems and what the busy physician can DO about them.

Because of insufficient time, medical school training and internship experience in the United States often fails to include systematic and thorough study of speech and its disorders. This is true even in the specialized areas of orthopedics, otolaryngology, pediatrics, psychiatry, and neurology. The result of this condition is that most physicians are not thoroughly prepared by special training to examine, diagnose, or to treat speech disorders. Although the incidence of speech disorders among patients seen by physicians is high, with few exceptions the patient with a speech disorder must turn elsewhere than to his physician for the help he urgently needs. To whom can he turn? The speech pathologist, with the degree of Doctor of Philosophy, is qualified to answer this felt need.

GENERAL PROBLEMS

Problems presented by speech-handicapped individuals are predominantly educational, social, emotional, and managerial. The child with

a speech disorder may appear to be retarded scholastically when actually he is not. Speech disorders tend to impair the child's relationship with his parents. If the speech disorder is unattended, the child may become more and more insecure, hostile, and socially withdrawn. Because of subtle and often unconscious rejection of the child by his parents, which he inevitably interprets as a "loss of love," he fails to establish a warm, normally-intimate family relationship. He "loses" love, which fills him with vague and ill-defined insecurity. In these circumstances, rehabilitation is very difficult. The actual degree to which his life can be integrated effectively and happily into the life of his family will depend heavily upon the degree of impairment of his speech function (3).

One important aspect of the general problem faced by children with speech disorders is that their difficulties are generally unrecognized and usually misunderstood. Because of "social penalty" involved, the child with a serious speech disorder soon learns not to talk any more than necessary, except with his closest friends. Thus, his speech disorder often avoids detection, and he "masquerades" as if his speech were entirely normal. The cumulative effect of this evasiveness is that the speech-handicapped individual becomes even more "out of tune" with his environment. He becomes even more misunderstood, rejected, and penalized. The emotional-social life of a child with a serious speech disorder, therefore, is soon characterized by repeated frustrations, and eventual demoralization.

THE INCIDENCE OF SPEECH DISORDERS

How prevalent are speech disorders? The Mid-century White House Conference on Children and Youth, in 1951, disclosed that the incidence of speech disorders, "in the lowest defensible estimates," was 5 per cent of the assumed total population of the United States. Speech disorders studied at this conference, by type, included: 1) dyslalia; 2) dysphemia; 3) delayed speech; 4) dysphonia; 5) speech associated with cerebral palsy; 6) speech associated with cleft palate;

7) anacusis, paracusis, and hypacusis. (3).

Speech disorders differ with respect to their etiology, symptomatology, and peculiar social matrix. These differences largely determine the course to be taken in therapy. It can be seen, therefore, that it is extremely important to make a proper diagnosis. An integrated attack upon the problem of disordered speech by the physician AND the speech pathologist would prevent and alleviate adverse effects of disordered speech. In the opinion of the writer, no other approach has as much to offer the patient with a speech disorder. It behooves the physician, therefore, to acquaint himself with minimal facts and procedures for rehabilitating the patient with a speech disorder.

WHAT CAN THE PHYSICIAN DO ABOUT SPEECH DISORDERS?

In addition to providing routine medical care and treatment for his patient, the physician should know when to refer him for qualified attention. This asks that the physician become familiar with principal types of speech disorders and recommended practice consistent with each type of defect. A brief discussion of "types" of speech disorders is therefore appropriate, together with suggestions regarding current speech correction practice as interpreted by the writer. The following material is not intended as a "quick course" in speech correction. The interested physician is respectfully urged to consult one of the many appropriate texts on this subject, a few of which will be listed in the bibliography. The following descriptions, therefore, are presented as "thumbnail sketches" of popular speech disorders and speech correction practices, specifically for the BUSY PHYSICIAN, and what physician isn't busy these days?

DYSLALIA

The dyslalias, or functional articulatory disorders, constitute 70 to 85 per cent of the speech correction problem. Dyslalias are primarily "disorders of articulation" resembling "baby talk" of early childhood. Dyslalias consist predominantly of substitutions, omissions, distortions, and additions of important speech sounds. For example, a patient with dyslalia may say: "Wed," for "red"; "pah," for "pop"; "shister" for "sister"; or "stalt," for "salt."

Causes of dyslalia are legion. Usually, how-

ever, it is difficult to demonstrate physical pathology, except for a high incidence of retarded diadochocinesis. Sometimes dyslalia is even the result of faithful imitation by the child of his parents, who frequently consider misarticulation at an early age "cute."

Prognosis for the dyslalias is usually excellent provided there is no appreciable delay in consulting qualified assistance. Dyslalia is most easily corrected by the speech pathologist while the patient is between four and seven years of age. Delay beyond this age serves only to strengthen faulty speech patterns. "Conditioned" misarticulation patterns resulting from such delay can be most resistant to correction. Individual clinical speech correction under the expert direction of a qualified speech pathologist corrects most speech failures if the specialist is consulted early enough. Contrary to popular opinion, parents are seldom able to correct speech disorders affecting their own children. Contrary also to well-intended advice by many physicians, true speech disorders are NOT outgrown.

DYSPHEMIA

Dysphemia includes disorders of speech rhythm, or "stuttering," "stammering," and "cluttering." Stuttering is an ambiguous and controversial term. The author prefers to use "non-fluency" when speaking of this phenomenon. The speech disorder this term attempts to describe has both "primary" and "secondary" symptomatology. The PRIMARY stage of dysphemia is very typically an exaggeration of normal non-fluencies which accompany all early speech effort. Any undue stress and strain in interpersonal relations during the period from three to five years of age is very apt to bring about these exaggerated non-fluencies. This is particularly true if parental figures display even the *slightest* alarm or displeasure with the child's non-fluency patterns.

In most instances, correction of PRIMARY non-fluency is not difficult. Most speech pathologists alleviate primary symptoms of non-fluency by environmental manipulation and parental counseling. Much of the "correction" of primary dysphemia is achieved through the establishment of a permissive, relaxed, and less-demanding total environment for the child. In working with primary symptoms, the speech pathologist assists the parent to become more tolerant and

permissive in his relationships with the child, which include giving "undivided" attention when the child is trying to communicate. In many instances of primary dysphemia, environmental manipulation and parental counseling is the only correction necessary to alleviate the distressing symptom. This is particularly true when parents are co-operative and understanding.

"Secondary" dysphemia, which is much more serious, occurs when the primary symptom has reached the child's awareness because of "social penalties." At this stage, efforts are consciously made by the dysphemic patient to "conceal" his symptoms. He tries, in vain, to avoid the disclosure of his non-fluency patterns. To accomplish this concealment, the dysphemic patient invents numerous "devices" and distractions to help him avoid embarrassment. Unfortunately, his contortions and devices enjoy little success, and instead of concealing, they invariably serve to *strengthen* and *reinforce* his symptom. Each new device is doomed to fail. Each new device tends to become habitual.

The subject with *secondary* dysphemia should receive IMMEDIATE corrective attention. Medical examination and treatment, if needed, should be accomplished prior to, or during, speech correction. When *secondary* symptoms are of an extended period, they are usually most resistant to correction. Secondary dysphemia is often associated with deep emotional conflicts, and optimum correction requires the combined services of the psychiatrist and the speech pathologist. A combined psychiatric-speech-relearning approach often helps the most resistant dysphemia. Autosuggestion is a valuable clinical tool in the correction of dysphemia. After having been trained in autosuggestion, it is easier for the dysphemic patient to acquire necessary techniques for bodily relaxation and control.

The physician can and should reassure parents that most PRIMARY dysphemia can be "cured" if it is seen early enough by the speech pathologist. The incidence of "cure" for *secondary* dysphemia, however, is disappointing. However, *all* patients with dysphemia can be greatly helped by early corrective therapy.

DELAYED SPEECH

Most physicians are well acquainted with developmental norms. It is the rare physician, how-

ever, who is acquainted with the "upper limits of normalcy" for the development of specific speech sounds in our language. Entirely too often, the physician gives sincere and well-intended advice to the parent that the child "will outgrow" his speech disorder "in due time." Contrary to this belief, however, many speech disorders are never outgrown. Even if spontaneous disappearance of a patient's symptom occurs, it usually happens so late in his life that he has already been crippled by very undesirable and lasting emotional reactions.

Upper limits of normalcy. Conservatively speaking, by the time the child is 3½ years of age, he should have acquired most of the vowel sounds, and consonants p, b, m, w, and h. By 4½ years of age, he should add t, d, n, g, k, ing, and j sounds. The child is given another whole year to acquire the consonant f. At 6½ years of age, the child's speech should include v, th, (as in "brother"), zh, (as in "azure"), sh, (as in "show"), and l. By the time he is 7½ years old, the child should have acquired the remaining consonants z, s, r, th, (as in "think"), and wh, (as in "wheel"). "Upper limits of normalcy" refers to the consistent use of these sounds in actual words and combinations that are meaningful to the child. A child who is 3½ years old or less should therefore not be considered abnormal in speech function if he does not consistently use any of the scheduled sounds. A healthy child below three years of age who has practically no intelligible speech is, therefore, not necessarily "abnormal." Parents of such a child often become anxious when they see and hear another precocious child of 18 months who can say words distinctly. The physician's familiarity with these upper limits of speech will enable him to reassure parents of the sturdy child of five who is unable to make the sounds of r and s. As the child "grows" in speech, he gradually acquires the more difficult consonant blends, such as: gr, br, fr, sl, gl, spr, thr, etc. There is need for more specific information with respect to this whole concept of "retardation" in speech.

Too often retarded speech is associated with general social, intellectual and developmental retardation. Too often, parents naively feel that their child's retardation and speech failure is due to the fact that he has not acquired speech for some mysterious reason. Usually, facts support just the opposite contention. That is, the

retardation in speech is *symptomatic* of generalized retardation in other skills. Absence of speech is more often the *result* of rather than the *cause* of retardation. In these cases, psychological testing is mandatory in order to establish social, intellectual, and developmental norms as an aid to diagnosis.

It would be a serious error if the pathologist were to work in cases of this kind with the symptom itself. More often than not, speech deviations and speech disorders are merely symptoms of deeper more underlying deviations and difficulties.

DYSPHONIA

Faulty phonation, or voice problems, are predominantly the result of disorders of pitch, loudness, or quality. The otolaryngologist sees many of these problems in his practice. When there is no active pathology in the larynx, the physician should refer the patient with dysphonia to the speech pathologist for correction. Ethical speech pathologists do not accept patients with dysphonia for correction unless they have been referred by a responsible physician.

In addition to being an organic problem, dysphonia is often associated with emotional maladjustment. In this instance the patient requires speech *and* personality retraining. Careful personality diagnosis is a prerequisite to successful therapy for the emotionally disturbed patient with dysphonia. Some speech pathologists are sufficiently trained in psychodiagnostic testing techniques to properly ascertain the severity of the patient's emotional disturbance. The ethical speech pathologist seeks the assistance of the psychiatrist whenever there is related evidence for hysterical symptoms or other deep-seated emotional problems.

Severe symptoms of anxiety often accompany voice disorders. Few cases of anxiety exceed that which follows the total loss of one's voice, or aphonia. Until recent years, laryngectomized patients who must suddenly face aphonia, or complete loss of voice, were very often candidates for severe post-operative depression. Today, however, thanks to the development of "esophageal speech" by speech pathologists, severe post-operative depression following laryngectomy is infrequent. Today's alert surgeon knows that candidates for laryngectomy should

now be given valuable anxiety reducing "speech insurance" training in esophageal speech *prior* to surgery.

The speech correctionist teaches these pre-operative patients to utilize esophageal "belching" of air for phonation. The patient is then taught to phonate and to articulate upon this stream of belched air. By "normal" modulation of this compensatory phonation, the patient quickly develops satisfactory functional speech. Depression and anxiety are thus greatly reduced as speech proficiency is developed. Except for a somewhat "hoarse" quality, good esophageal speech is difficult to discriminate from normal laryngeal speech. It is therefore good therapeutic "insurance" to refer patients for laryngectomy to the speech pathologist *prior* to operative procedures. The shock of the resulting aphonia is thus greatly reduced, and the entire operative procedure is easier for the patient to accept.

SPEECH ASSOCIATED WITH CEREBRAL PALSY

Dyslalia, dysarthria, and dysphasia are important sequelae to cerebral palsy. Seventy per cent of patients with cerebral palsy are in need of expert speech correction. Half of the patients with cerebral palsy have *severely* defective speech. "Cerebral palsy speech" is characterized by many types of speech disorders, including dysphemia and halting rate of speech, dyslalia, and dysphonia. The speech of the patient with cerebral palsy may also lack flexibility, resonance, and control. It may also be characterized by erratic intensity and pitch. Articulatory disorders may develop to the point of unintelligibility(12). In many instances, patients with cerebral palsy also demonstrate characteristic symptoms of brain injury, which will be discussed in a later section of this paper.

Thanks to the efforts of several national agencies, most cases of cerebral palsy are now diagnosed early, and referred for corrective attention. Today, the child with cerebral palsy soon comes under the expert care and guidance of rehabilitation centers, most of which are directly associated with some national agency. Through such agencies, the child with cerebral palsy receives an integrated program of therapy, including the services of medical specialists: pediatricians, orthopedists, neurologists, psy-

chiatrists, psychologists, speech therapists, social workers, and vocational rehabilitation counselors. These specialists recognize the need for, and actively encourage the early treatment of the various disorders which accompany cerebral palsy.

SPEECH ASSOCIATED WITH CLEFT PALATE

"Cleft palate speech" is usually characterized by rhinolalia aperta, or hypernasality, and various other symptoms of dyslalia. With cleft palate, it is very desirable for the physician to consider the feasibility of operative repair. The earlier the cleft repair is accomplished, the better. Most physicians and surgeons are very familiar with operative hazards and problems in cleft palate repair. One recently-added *major criteria* for the "successful" operative repair of cleft palate, which should be emphasized, is the post-operative *speech function* of the repaired velar tissues. If post-operative speech can not be achieved due to faulty tissue innervation or due to other operative procedures, the operation is not considered "successful."

Prosthesodontia is often used to effect a velar-pharyngeal closure. In these instances, referral to the speech pathologist is also desirable. This insures proper training and development of techniques for successful velar closure, and provides "speech insurance" as well. Six or seven years of patient, corrective treatment and understanding attention are often necessary for the successful correction of cleft palate speech. Early referral insures a more favorable prognosis for speech development.

ANACUSIS, HYPACUSIS, and PARACUSIS

The incidence of speech disorders arising from faulty speech perception is relatively high. There are an estimated one and one-half to three million hard of hearing persons in the United States. Most of these persons suffer a loss of acuity to and discrimination of high frequency sounds. This perceptual loss is nearly always accompanied by a parallel loss of production of high frequency sounds, such as the sibilants s, z, ch, and sh.

The severity of the speech disorder in paracusis is highly correlated with the age of onset and severity of aural impairment. Careful diagnosis is *mandatory*. The diagnosing specialist

must keep in mind that *one* ear with a normal threshold of hearing is sufficient for the development of normal speech. If it can be demonstrated that the child with a speech disorder of suspected perceptual origin has a normal hearing threshold in one ear, the speech disorder must be attributed to causes *other than* the impairment of hearing for the other ear. To affect the production of speech, paracusis must be bilateral, regardless of the dysfunction it may demonstrate unilaterally.

When paracusis occurs after speech has been acquired, the most usual effect upon speech is monotony of pitch level. If it is acquired prior to the development of speech, the sounds whose essential movements are in back of the mouth, and are thus "invisible," are learned only with great difficulty.

In hearing impairment of conductive origin, the speech of the patient is apt to be subdued in volume, whereas in hearing impairment of perceptive origin, the patient does not have the benefit of bone conduction, and may actually *shout*. In conductive loss, there is a monotony of volume and pitch level. In perceptive loss, the voice may show exaggerated modulations in volume.

To educate a child with any degree of hearing loss exceeding 30 decibels, it is necessary to utilize the full remnant of his residual hearing. This usually requires the use of electronic amplification. The speech pathologist usually has electronic amplification equipment available for diagnosis and therapy. The hard of hearing patient also needs speech correction to develop other senses to assist in his adjustment to diminished hearing reception. This is particularly true for learning and controlling speech. The additional senses most often utilized are vision, kinesthesia, and cutaneous sensation.

Prognosis for speech in conductive impairment is better than it is for perceptive impairment. The patient's intelligence is a major factor in predicting the success for speech correction in either type of impairment.

Many times, severe depression accompanies a loss of hearing. Psychologically, this is felt to be due to the "deadness" that results from the severance of the patient's "world of sound." Whenever he thus becomes isolated from the world of sound, the patient becomes unduly

anxious and depressed. This is felt to be due to the fact that the patient misses the unconscious "coupling effect" of the constant, rhythmic, auditory "ebb and flow" of sound patterns which serve to link us securely with the world of reality. For these patients, amplification of sounds literally performs "miracles" of revitalization, particularly when auditory training is made available to insure the full development and appreciation of the "coupling effect" with reality.

Otolaryngologists are becoming increasingly aware of the advantages and importance of careful audiometric testing for critical otological diagnosis. Diagnostic audiometric testing is best accomplished by a qualified audiologist. Audiologists are persons who have had extensive training, specialization, and experience in hearing problems and psychoacoustic hearing manifestations for individuals. Audiometric testing functions best in close cooperation with the medical profession. A "peripheral" relationship and contact between the person trained in audiology and the physician will not serve the hard of hearing patient as he should be served. The audiologist deserves to be considered a full member of the diagnostic team, and not a mere "manipulator" of admittedly intricate electronic equipment(7).

The concept of rehabilitating the aurally handicapped individual now reaches beyond the medical and surgical boundaries. The physician is beginning to recognize the important diagnostic service to be had from consultation with specialists who have at least basic clinical certification in audiology. Often the speech pathologist, in recognition of the *close affinity* between hearing and speech, has achieved at least basic certification in audiology.

DYSPHASIA

The incidence of dysphasia among children is much higher than some physicians realize. Obstetricians and pediatricians are well aware of hemorrhage to the fundi of the eye that often accompanies a large percentage of so-called "normal" births. It would seem reasonable to assume in these cases that hemorrhage might easily have been more diffuse, resulting in petechial hemorrhage throughout the white matter and basal ganglia of the brain.

Whenever trauma occurs to the central nervous

system prior to the acquisition of speech and particularly when it occurs to cortical tissue, the resulting dysfunction is quite apparent. Symptoms of cerebral damage usually become known during the first year of life, although frequently the resulting "organicity" goes undetected for years. Early speech symptoms in organicity include late onset of speech, "aphasic-like" symptoms, distorted phonation, singlingualism, and "idioglossia."

The so-called "brain-injured child" is the major character included in the category of dysphasia. Brain-injured children are characterized by diffuse behavioral symptoms. Their behavioral symptoms include: disordered thought processes; a lack of awareness of purpose; an inability to react to stimuli of sufficient intensity; disorders of the capacity to discriminate between relevant and irrelevant perceptions; and disordered tenacity, or the ability to pursue a goal until it is achieved. In these patients, the physician is also soon aware of hyperkinesis, hypermotility, disinhibition, or the so-called "organic drivenness"(4) (11). In training dysphasic brain-injured children, speech too often must be considered *secondary* to managerial problems.

Learning procedures of any kind for brain-injured patients requires that the physician bring "hyper" symptoms under some degree of control. This is usually accomplished through the use of one or more of the currently available anticonvulsant drugs. The child who suffers from "forced attentiveness" to every conceivable external and internal irrelevant stimuli is in dire need of all of the additional synergistic palliation at our command. These managerial considerations are prerequisite to *all* learning activities, including speech training. It is necessary that the therapeutic atmosphere for the brain-injured child be intensified, constant, and under conditions of greatly reduced irrelevant stimulation. He seems to profit most from specialized training schools and centers where his "every waking hour" is under constant training and supervision. Such training usually includes self-help, occupation, self-direction, socialization, and communication.

Brain-injured adults suffer various degrees of disability, and demonstrate two general types of symptoms: 1) those which are an expression of a change in their whole personality; 2)

and those which are expressions of the organism's struggle with its impairment(4). Homeostatic imbalance is a frequent phenomenon. Many of their symptoms are expressions of a systematic disintegration of the organism. In these latter instances, there may be: 1) an abnormal spread of neural excitation; 2) a rise of threshold and a retardation of excitation; 3) undue influence of external stimuli; or, 4) a general "blurring" of the sharp boundaries between "figure" and "ground." Often, there are symptoms which represent an impairment of a specific "attitude." In this sense, "attitude" is seen as a continuum from concrete to abstract.

Loss of "abstract attitude" is responsible for many, often "bizarre," symptoms in brain-injured adults, including: 1) disturbed planning ability, 2) disturbed spatial relations, 3) confused memory span, and 4) "ego-detachment"(4) (6).

Although neurosurgeons see many adult brain-injured patients, the high incidence of head injury in these days of high speed and busy highways makes the incidence of brain-injury high in the practice of *most* physicians. Probably the most important aspect of retraining the adult dyspasic patient is the often unrealized need for *early referral* to a qualified speech pathologist. Post-operative patients should be seen, for example, *before* they are able to leave the hospital. Any delay in retraining causes an almost logarithmic increase in time and effort necessary for the rehabilitation of speech and language functions.

The more "global" injuries, which result from massive cerebral hemorrhage and other traumatic and nontraumatic hematomas, are not prognostically favorable for speech training. This emphasizes the need for accurate diagnosis in dysphasia. Whenever there is serious disturbance of "abstract attitude," which can be determined by the well-trained speech pathologist through the use of psychodiagnostic tests, prognosis is poor. One fundamental prerequisite to speech retraining is the physician's assurance that pathology, if present, is arrested.

Other frequent and distressing sequelae in dysphasia may include mental symptoms, emotional instability, thalamic pain syndromes, homonymous hemianopsia and more or less "permanent" dysphasia.

Dysphasic adults have shown remarkable re-

covery under private individual therapy sessions. A legitimate speech pathologist should have the necessary training and experience to provide proper diagnosis and training for functional language disorders in dysphasia and related symptoms. For best prognosis, it is mandatory that the physician make an *early* referral.

Frequently the patient with dysphasia has a history of pre-morbid personality maladjustment which precludes co-operative effort on his part in the difficult therapeutic process. The cerebral trauma in these instances acts as a catalyst, and precipitates post-traumatic psychoneuroses and psychotic symptoms. The psychiatrist is the logical person to treat and evaluate post-traumatic emotional disturbances in adult brain injury. Prognosis for rehabilitation in these cases is naturally less favorable. Often, whenever there is severe post-traumatic personality change, it is the psychiatrist who must decide which of the patient's symptoms to retain and which to attempt to change.

WHO IS THE SPEECH PATHOLOGIST?

Training received by speech pathologists differs in the areas of emphasis among the universities and colleges who confer the M.A. and Ph.D. degree in speech correction. The particular emphasis received by the student of speech pathology is dependent, in large measure, upon the philosophy and departmental affiliation of speech correction at the particular institution of his choice. In some universities and colleges, speech correction is an integral part of "special education." In other institutions, speech correction is a specialty associated with clinical psychology. In still other instances, speech correction evolves out of the general speech or English departments. In spite of this diversified background, however, the training of qualified speech correctionists has emphasized an integration of current medical and speech correction principles and research. There is no consistent policy for training speech pathologists, in some major respects, in the United States. Regardless of his training, however, the professional preparation and *certification* of speech correctionists insists upon particular co-operation with physicians, public health nurses, dentists, social workers, clinical psychologists, ministers, school teachers and administrators, vocational rehabilitation counselors, and parents.

Although many competent speech correctionists have only a master's degree, the highest professional level of qualification is the degree of doctor of philosophy. The qualified speech pathologist also will have attained either basic or advanced clinical certification with his parent organization, the American Speech and Hearing Association. All certified professional speech correctionists are listed in directories published by the American Speech and Hearing Association, which are available in most libraries. As with most professional groups, however, mere membership in his professional organization does not constitute an endorsement of his qualifications or practice. Like the physician, the speech pathologist is "judged" by his personal qualifications and training, his experience, his ability, and his ethics.

EDUCATIONAL PRINCIPLES OF SPEECH CORRECTION

The educational principles that underlie the practical application of speech correction are sound principles for all. These principles, in fact, serve as an example of efficient democratic living and healthy personality training(3).

The qualified speech pathologist explores the specific needs of his patient, and "designs" individual instruction and personal attention as indicated by these needs. He, like the physician, has a deep respect for the person with a speech disorder as a unique human being. Both the speech pathologist and the physician recognize that the child's "inalienable right" is to be accepted as a unique individual by all persons, including his adult authoritarian figures. The child needs protection from distortions, unnecessary deprivations, and exploitations by all adults. The ideal program for speech correction has its foundation upon this principle of individuality.

Social behavior is implicit in the speech function, and social reward should accompany correct speech. There is a very close correlation between speech and personality, and everything possible should be done to improve personality growth and personal adjustment during the time the person with defective speech is engaged in formal speech improvement training.

The qualified speech pathologist recognizes that the most important aspect of intelligent handling of the patient with a speech disorder is an accurate and thorough diagnosis. Emotional

aspects of the speech disorder make mandatory a thorough evaluation, prior to therapy, of the patient's intellectual and emotional assets and liabilities. This evaluation should consist of a psychological "battery" of tests of sufficient diversity to provide a "cross-section" of existing personality structure, as well as a panorama of developmental fixations and traumas directly or indirectly contributing to personality and symptom formation.

In recognition of this unique, "whole personality" approach to speech correction, some speech pathologists have insisted that their professional training include psychodiagnostic test administration and interpretation, as well as sound procedures for the use of psychotherapy.

Speech pathologists in your area can usually be reached by consulting the appropriate section of your telephone directory. If none are listed in your telephone directory, they can be located by geographic area in the directories published by the American Speech and Hearing Association.

Speech correction is a relatively new profession. There are not many speech correctionists in private practice. Most speech correctionists are affiliated with universities and other organizations designed primarily as training centers for public school speech correctionists. Many areas do not have a public school correctionist. Many public school correctionists have tremendous "case loads," and therefore have very limited clinical time to spend with the child who needs individual clinical attention. The public school correctionist often needs to refer more difficult cases to the speech correctionist in private practice.

Most speech pathologists in private practice prefer that their patients be referred by physicians. In some instances, however, referrals originate from dentists, social agencies, schools, and ministers. When this occurs, it is standard operating procedure for the speech pathologist to insist upon a thorough medical examination prior to the beginning of therapy.

Often the question of group versus individual therapy is brought to the attention of the physician. This is particularly true if there are university and college speech clinics near at hand. Too often group therapy, as provided by

such clinics, is excellent training for embryonic speech correctionists, but falls far short of the mark in terms of actual, economical and consistent benefit to the patient. A program of individual, intensified and socialized speech correction, in conjunction with either nursery school or public school training, offers the most economical and surest route to correct speech and social rehabilitation.

In private practice, the correctionist must produce measurable results. The "pressure" he undergoes to establish demonstrable results of his corrective procedures is not as dominant in many "group" situations. The speech correctionist in private practice who does not produce results soon leaves private practice to seek gainful and secure livelihood elsewhere. As with most professions, the speech pathologist's roster of subjects tends to serve somewhat as an "index" to his professional proficiency.

In private practice, the speech pathologist generally prefers that the physician make referral arrangements for the patient with a speech disorder. When this is done, relevant material of importance to speech diagnosis and therapy is provided and discussed. Relevant material

covering medical examinations, lab tests, and specific neurological findings is most important to the speech correctionist, particularly whenever the referral involves any remote possibility of unarrested pathology.

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The President's Page

From the AMA Washington letter 85-40 dated Oct. 4, 1957:

"WITHIN THE NEXT 25 YEARS, HOSPITALS WILL BE PROVIDING AT LEAST AS MUCH PREVENTIVE SERVICE AS CURATIVE SERVICE," ACCORDING TO MR. FOGARTY. "HOSPITALS, IN FACT, ARE MOVING CLOSER EACH MOMENT TO THE DAY WHEN HOSPITALS WILL BE THE FOCAL POINT OF HEALTH SERVICES FOR ALL OF US THROUGHOUT OUR ENTIRE LIVES."

ON THE ROLE OF GOVERNMENT IN HEALTH, MR. FOGARTY HAD THIS COMMENT: "IT IS NOW GENERALLY ACCEPTED THAT THE HEALTH OF OUR PEOPLE IS A MAJOR NATIONAL RESOURCE AND THAT THE GOVERNMENT, THEREFORE, HAS A DIRECT RESPONSIBILITY FOR THE HEALTH OF EVERYONE . . ." AHA MADE MR. FOGARTY AN HONORARY MEMBER, CITING HIS EFFORTS IN MEDICAL RESEARCH FUNDS AND HEALTH FACILITIES.

MR. JOHN FOGARTY (D., R.I.), CHAIRMAN OF THE HOUSE APPROPRIATIONS COMMITTEE ON THE HEW BUDGET, MADE THIS STATEMENT IN AN ADDRESS TO AMERICAN HOSPITAL ASSOCIATION'S ANNUAL CONVENTION.

SO YOU THOUGHT THAT SOCIALIZATION OF MEDICINE WAS DEAD.

IF THE GOVERNMENT "GIVES" MONEY AS HILL-BURTON FUNDS, MEDICAL SCHOOL GRANTS, ETC., THEY (THE DO-GOODERS) ARE ACTIVELY PLANNING ON MOVING IN JUST AS FAST AS THEY DARE.

IT WAS APPARENT TO ME THAT OUR HOSPITAL FRIENDS OF AHA WERE FOLLOWING THIS TRACK WHEN THEY STARTED THEIR 13 STORY BUILDING ON LAKE SHORE DRIVE IN CHICAGO.

UNDER VARIOUS DISGUISES THE HOSPITALS ARE MOVING INTO THE PRACTICE OF MEDICINE AND WILL CONTINUE TO DO SO UNLESS YOU, EACH AND EVERY ONE OF YOU, STAND UP AND BE COUNTED AS FOR OR AGAINST THIS ENCROACHMENT. BEWARE OF THE DAY WHEN HOSPITALS RENT YOU YOUR OFFICES IN EXCHANGE FOR GUARANTEEING YOU A BED. THE LABORATORY, X-RAY AND PHARMACY ARE PROFITABLE ENTERPRISES FOR THE HOSPITAL TO MAINTAIN. THE FIRST TWO ARE DEFINITELY IN THE FIELD OF MEDICINE AND SHOULD BE CONSIDERED AS THE CORPORATE PRACTICE OF MEDICINE.

BEWARE OF THE HOSPITALS DICTATING THROUGH BLUE CROSS TO BLUE SHIELD. THE SUPERSTRUCTURE SET UP BY THE LARGER PLANS OF BLUE CROSS TO CIRCUMVENT THE JOINT COMMISSION OF BLUE CROSS AND BLUE SHIELD IS A CASE IN POINT.

MAY THE HOLIDAY SEASON BE HAPPY AND THE NEW YEAR PROSPEROUS FOR ALL OF YOU.

C. C. CRAIG, M.D., President,
The Arizona Medical Association, Inc.

Editorial Page

ARIZONA MEDICINE

Journal of

ARIZONA MEDICAL ASSOCIATION, INC.

VOL. 14 DECEMBER, 1957 NO. 12

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
 2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
 3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
 4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
 5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.
 6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.
 7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.
 8. Illustrations — Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.
 9. Reprints — Reprints must be paid for by the author at established standard rates.
- The Editor is always ready, willing, and happy to help in any way possible.

(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

SHOULD ARIZONA ESTABLISH A MEDICAL SCHOOL?

THE population growth in the United States would indicate that by 1965 the number of students enrolled in our facilities of higher education will approximately double. Obviously, in association with the population growth of this extent there will be an increased demand for the services in the health field; that is, for more physicians, dentists, nurses, and so forth. To date, Arizona has recognized this need for access to educational opportunities beyond those that are available within the state and it is participating in the program of the Western Interstate Commission for Higher Education. In 1956 this necessitated financial support to 57 students, 24 of them medical students, 24 veterinary students and 9 dental students. California and Washington have now joined the compact which makes six additional medical schools potentially available to Arizona students. Changes in the present law decreasing the necessary 10-year residence to make the student eligible for aid, and alterations in the repayment demands would lead to a more satisfactory and helpful program.

Recently interest has been evident in the state medical association and in the state legislature as to the feasibility and desirability of developing a medical school within the state. Then, if a school is established, should it be a two year or a four year school? If established, which should be its location — in the Tempe area, or in Tucson?

The organization of a medical school would obviously make a considerable impact upon the existing educational programs within Arizona not only as an aid to them but also in the educational tax structure. Secondly, the impact upon the medical profession in the state would be quite enormous and, of course, there would be certain developments in relation to the citizens of the state.

Two-Year Medical Schools

Until recently North Carolina, Missouri, Mississippi, West Virginia and Utah had two year medical schools. These have now been expanded to four year programs. Only three two-year medical schools in the United States remain today. They are at Dartmouth, North

Dakota and South Dakota. The major reason for the existence of two-year medical schools seems to be to afford an opportunity for medical education to students in the state who otherwise could not enter medicine. It is believed that the establishment of a two-year medical school in Arizona would undoubtedly lead to an increase in the number of Arizona students seeking training in medicine. At present, the medical school committee of the Arizona Medical Association is investigating a two-year program more extensively. Present statistics would indicate adequate openings for more students in the third year classes.

In the past, undergraduate medical education was divided into a basic scientific program and a clinical program. At times these two divisions were separated geographically and in a few schools such separation still exists as in Indiana, Kansas, and the University of California in San Francisco. However, the trend in medical education is decidedly toward the integration of the clinical and basic science program. Further, faculties for the basic science programs can be attracted with greater ease if the clinical departments are also present in the same location.

It is to be noted that the major financial problem and the major administrative problems of a medical school are those related to the need for hospital facilities for the clinical departments which of course makes a two-year preclinical school a much more feasible initial step. Certainly, it makes the two-year medical school a much more logical step for Arizona at the present time. During past years there have been approximately 465 vacancies in the third-year classes in medical schools which could absorb the graduates of the two-year medical schools. However, in view of the rapidly increasing population of the Southwest and the anticipated increase in applicants for medicine, the total plan should probably include a four-year school.

Again however, it should be noted that the statement, "anticipated increase in applicants for medical training," can be quite erroneous, for within recent years the ratio between applicants and number of students accepted has dropped from a ratio of 6 to 1 to approximately 1.8 to 1. Contrary to this, is the anticipated tidal wave of students expected in our liberal arts colleges. It is predicted that the number of medical school applicants which is now 14,000, will be upped

to 24,000 by 1966.

Location of the Medical School

Should not be considered at present. There are good arguments and many successful examples for locating the medical school on the university campus in a small community as the recent development of the medical school in Kentucky at Lexington, or the four-year school of Missouri at Columbia. However, numerous medical schools, such as Northwestern, Temple, and the University of Tennessee are separated widely from their respective university campuses.

Facilities

The trend in teaching laboratories is toward multi-purpose units housing up to four students instead of the single large laboratory for the entire class.

A medical school should operate its own hospital located on the university campus as an integral part of the medical center. However, clinical opportunities can be extended if the medical school will affiliate with private or municipal hospitals. The dean's committee arrangement in conjunction with the veterans' administration Hospitals is encouraged by the veterans' administration and is proving of considerable mutual benefit.

In selected fields as psychiatry, tuberculosis or malignant diseases, specialized hospitals may be developed as components of the educational program.

It is to be noted that private patients are being used increasingly in the educational program.

Relations with the Medical Profession

One of the major problems is the conflict within the medical profession and the establishment of the opportunity for the medical school faculty to see private patients. It is rare for medical schools to be able to pay salaries to the clinical faculty that are sufficiently attractive to compete with income from private practice. This has brought the medical school into direct conflict with the physicians of the community and it is essential that specific controls be developed to hold these conflicts to a minimum. The best control seems to be to select a faculty of men and women who are sincerely dedicated to a scholarly career of teaching and research. Simultaneously, it must be noted that the practicing profession has a very real contribution to make to medical students.

A basic science faculty will be greatly enhanced by an opportunity for a relationship with the biological sciences in a university program. Frequently, these basic science departments can carry a large responsibility for the educational programs in other areas of the university. There are no fixed ratios of faculty vs. students in these departments, and in a number of universities the basic science departments as biochemistry and anatomy have department heads who are not physicians. However, in the clinical departments there should be a nucleus of full-time teachers in each major department.

Should Arizona have a medical school? The opportunities of Arizona youth under the WICHE are such that top Arizona students will never have difficulty gaining admission to medical schools in many other states. However, it must be noted that students below the top level do go to medical schools and become leading physicians, which is an opportunity not presently afforded to the Arizona boy or girl.

New Mexico is actively discussing a medical school. There obviously should be free consultation between the two states regarding these developments and needs. It does not seem likely that both states should develop a medical school at the present time.

STATISTICS

1. Population of Western states census estimate, 1955.

| | |
|---------------|------------|
| A. California | 12,961,000 |
| B. Washington | 2,607,000 |
| C. Oregon | 1,685,000 |
| D. Colorado | 1,547,000 |
| E. Arizona | 1,000,000 |
| F. Utah | 797,000 |
| G. New Mexico | 793,000 |
| H. Montana | 629,000 |
| I. Wyoming | 312,000 |
| J. Nevada | 235,000 |

(Phoenix, the state's largest city, is listed as the seventh largest in the West).

2. Percent increase in population in each of the Western states, 1940-1950 and 1950 to 1955.

1940 to 1950 California increased 53 per cent, Arizona 50 per cent and Nevada 45 per cent. These were the top three. From 1950 to 1955 Arizona was second only to Nevada which increased 47 per cent and Arizona 34 per cent with California dropping to 22 per cent.

3. Population and population projected; Arizona 1930 to 1975.

1930 population just in excess of 400,000. Anticipated to be approximately 2,400,000 in 1975. The question arises, will new physicians come to the state to keep up with this growth?

4. Physician Supply

Number of physicians per 100,000 population in each of the Western states as of 1950:

| | |
|---------------|-------|
| A. Colorado | 171.9 |
| B. California | 154.9 |
| C. Nevada | 126.8 |
| D. Utah | 122.8 |
| E. Washington | 117.3 |
| F. Oregon | 116.7 |
| G. Arizona | 109.9 |
| H. Montana | 96.3 |
| I. Wyoming | 85 |
| J. Idaho | 80.5 |
| K. New Mexico | 77.8 |

The figure for the West as a whole is 137.4. The national figure is 129.1.

To date, there seems to be an adequate supply of physicians with the shortage noted only in the smaller or smallest towns.

5. Estimates of the number of practicing physicians as compared with physicians needed to maintain current physician-population ratio.

This would anticipate a need of approximately 2,500 physicians by 1975 assuming about 750 physicians were practicing in the state in 1950. However, with the 5 per cent increase in number of graduates or no increase in the number of graduates, the physician supply in the United States will not keep up with the expected increase in population and instead of Arizona obtaining 2,500 physicians by 1975, it will attain between 2,000 and 2,200. This, of course, assumes that Arizona will continue to get its same share of graduating physicians compared with the state's population as it has in the past.

6. Per capita income in the Western states, 1955.

| | |
|---------------|---------|
| A. Nevada | \$2,434 |
| B. California | 2,271 |
| C. Washington | 1,987 |
| D. Montana | 1,844 |
| E. Oregon | 1,834 |
| F. Colorado | 1,764 |
| G. Wyoming | 1,753 |
| H. Arizona | 1,577 |

I. Utah 1,553
 J. Idaho 1,462
 K. New Mexico 1,430
 (The national figure is \$1,847
 Arizona's per capita income increased from 1950 to 1952. Since then it has decreased.

7. Education — Median years of school completed by adults in the Western states.

A. Utah 12
 B. California 11.6
 C. Nevada 11.5
 D. Washington 11.2
 E. Wyoming 11.1
 F. Idaho 11
 G. Oregon 10.9
 H. Colorado 10.9
 I. Montana 10.2
 J. Arizona 10.0
 K. New Mexico 9.3

8. Medical students — Number of medical freshmen per 1 million population from each of the Western states: Average, 1950-1955.

A. Utah 80.3
 B. Colorado 57.0
 C. Wyoming 46.5
 D. Oregon 46.5
 E. Washington 43.5
 F. Montana 41.8
 G. Idaho 41.4
 H. California 31.7
 I. Arizona 31.3
 J. New Mexico 21.9
 K. Nevada 13.5

In the past few years, Arizona has only begun to participate in the Western Interstate Commission's contract program. In the future, it is anticipated that there will be an increase which will affect and improve this proportion.

9. Ratio of medical school applicants to acceptances from each state in the West.

A. Nevada 3.53
 B. California 2.94
 C. Washington 2.40
 D. Montana 2.33
 E. Arizona 2.23
 F. Idaho 2.16
 G. New Mexico 2.12
 H. Utah 2.11
 I. Wyoming 2.01
 J. Colorado 1.97
 K. Oregon 1.84

10. Ratio of applicants to acceptances assuming a 5 per cent increase in medical school enrollment in each five-year period over the previous five-year period: 1950-1975.

This would place Arizona in 1950-1955 as having approximately 2.2 applicants for each acceptance where in 1975 this ratio will have risen to approximately four applicants for each acceptance.

If the ratio of applicants to acceptances assuming no increase in medical school acceptances during the period of 1950 to 1975, this would alter the ratio instead of 2.2 applicants to one acceptance in 1950, to approximately five applicants for one acceptance by 1975.

11. Source of physicians: Per cent of those physicians now living in each of the Western states who graduated from Western medical schools:

A. Oregon 53.6
 B. California 37.6
 C. Colorado 37.6
 D. Washington 20.5
 E. Idaho 18.2
 F. Utah 17.7
 G. Nevada 15.5
 H. Wyoming 9.9
 I. Arizona 9.1
 J. New Mexico 8.0
 K. Montana 7.7

This would indicate that Arizona's major source of physicians is coming from M.D.s who have moved to the West from other parts of the country.

12. Medical schools in the West:

School of Medicine of the College of Medical Evangelists

Stanford University School of Medicine

University of California School of Medicine

University of California School of Medicine at Los Angeles

University of Colorado School of Medicine

University of Oregon Medical School

School of Medicine of the University of Southern California

University of Utah College of Medicine

University of Washington School of Medicine

That is, five medical schools in California, one each in Oregon, Washington, Utah and Colorado. No medical schools in Montana, Idaho, Wyoming, Nevada, Arizona, New Mexico.

NATIONAL FUND FOR MEDICAL EDUCATION
(Special Consideration for State Medical Schools)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|--|--------------------|-----------------|--------------------|----------------------|--------------------------|---------------------------------|--------------------------|-------------------------|--------------------------|
| | Number of Students | Budget Teaching | Income per Student | Tuition & Fee Income | Per Cent of Total Income | Other Inc. from Private Sources | Per Cent of Total Income | Income from Tax Sources | Per Cent of Total Income |
| Med. College of Alabama | 294 | \$ 961,696 | \$ 3,271 | \$129,377 | 13% | \$ 6,150 | 2% | \$ 826,169 | 85% |
| U. of Arkansas Sch. of Medicine | 314 | 1,849,941 | 5,891 | 127,941 | 7% | 316,000 | 17% | 1,406,000 | 76% |
| U. of Southern California | 270 | 785,000 | 2,907 | 255,000 | 32% | 480,000 | 61% | 50,000 | 7% |
| U. of Calif. Sch. of Med., San Francisco | 325 | 2,543,000 | 7,824 | 65,000 | 2% | 38,000 | 1% | 2,440,000 | 97% |
| U. of Calif. Sch. of Med., Los Angeles | 165 | 2,436,110 | 14,764 | 56,110 | 3% | — | — | 2,380,000 | 97% |
| U. of Colorado Sch. of Medicine | 313 | 1,108,600 | 3,541 | 354,000 | 31% | 37,600 | 4% | 717,000 | 65% |
| Medical College of Georgia | 351 | 816,160 | 2,325 | 132,000 | 16% | 49,500 | 7% | 634,660 | 77% |
| U. of Illinois College of Medicine | 633 | 2,659,048 | 4,200 | 218,242 | 8% | 26,000 | 2% | 2,413,906 | 90% |
| Indiana U. School of Medicine | 588 | 1,480,353 | 2,517 | 185,600 | 12% | 635,000 | 5% | 1,231,253 | 83% |
| State U. of Iowa College of Medicine | 446 | 1,427,900 | 3,201 | 135,584 | 9% | 32,000 | 3% | 1,260,316 | 88% |
| U. of Kansas School of Medicine | 428 | 1,939,143 | 4,530 | 180,000 | 9% | 25,000 | 3% | 1,934,143 | 88% |
| Louisiana State U. School of Medicine | 425 | 1,595,617 | 3,756 | 4,000 | 1% | — | — | 1,592,617 | 99% |
| U. of Maryland School of Medicine | 376 | 1,103,505 | 2,934 | 283,475 | 25% | 76,560 | 8% | 743,490 | 67% |
| U. of Michigan Medical School | 787 | 3,045,189 | 3,869 | 368,746 | 12% | 484,193 | 15% | 2,192,250 | 73% |
| U. of Minnesota Medical School | 492 | 1,842,257 | 3,561 | 239,482 | 12% | 119,324 | 8% | 1,483,451 | 80% |
| U. of Nebraska College of Medicine | 337 | 842,844 | 2,501 | 160,000 | 19% | 25,000 | 3% | 657,844 | 78% |
| State U. of N.Y. College of Med., NYC | 587 | 2,700,977 | 6,305 | 423,600 | 15% | 138,350 | 6% | 2,139,027 | 79% |
| State U. of N.Y. College of Med., Syracuse | 284 | 2,040,307 | 7,814 | 203,000 | 10% | 63,700 | 4% | 1,773,607 | 86% |
| U. of North Carolina School of Medicine | 248 | 1,254,103 | 5,056 | 128,200 | 12% | 125,335 | 10% | 1,000,568 | 78% |
| Ohio State U. College of Medicine | 572 | 2,488,744 | 4,350 | 277,225 | 11% | 367,865 | 14% | 1,843,654 | 75% |
| U. of Oklahoma School of Medicine | 379 | 940,950 | 2,483 | 164,120 | 17% | 83,924 | 9% | 692,906 | 74% |
| U. of Oregon Medical School | 297 | 1,186,995 | 3,999 | 150,000 | 12% | 88,651 | 8% | 948,344 | 80% |
| U. of Pennsylvania School of Medicine | 501 | 2,231,634 | 4,454 | 429,414 | 19% | 915,606 | 40% | 885,614 | 41% |
| Medical College of South Carolina | 295 | 1,047,750 | 3,551 | 127,950 | 12% | — | — | 919,800 | 88% |
| U. of Tennessee College of Medicine | 802 | 1,097,000 | 1,367 | 413,000 | 38% | 92,000 | 8% | 592,000 | 54% |
| U. of Texas School of Medicine | 611 | 1,957,000 | 3,202 | 27,000 | 2% | 150,000 | 7% | 1,780,000 | 91% |
| U. of Utah School of Medicine | 202 | 677,250 | 3,352 | 108,250 | 16% | 9,000 | 2% | 560,000 | 82% |
| U. of Vermont College of Medicine | 182 | 774,499 | 4,255 | 161,950 | 20% | 110,049 | 16% | 502,500 | 64% |
| U. of Virginia School of Medicine | 296 | 967,078 | 3,233 | 140,000 | 14% | 130,909 | 13% | 696,169 | 73% |
| U. of Washington School of Medicine | 287 | 1,810,596 | 6,308 | 162,500 | 8% | 23,407 | 3% | 1,624,689 | 89% |
| U. of Wisconsin Medical School | 321 | 1,219,882 | 3,800 | 102,030 | 8% | — | — | 1,117,852 | 92% |
| Basic Science Two Year Schools | | | | | | | | | |
| U. of Mississippi School of Medicine | 167 | 798,156 | 4,810 | 85,800 | 10% | 24,500 | 4% | 687,856 | 86% |
| U. of Missouri School of Medicine | 116 | 999,000 | 8,612 | 21,000 | 2% | 10,000 | 1% | 968,000 | 97% |
| Dartmouth Medical School | 48 | 192,342 | 4,007 | 34,534 | 18% | 152,808 | 80% | 5,000 | 2% |
| U. of North Dakota School of Medicine | 78 | 368,000 | 4,718 | 4,500 | 1% | — | — | 363,500 | 99% |
| U. of South Dakota Sch. of Med. Science | 71 | 236,200 | 3,326 | 20,220 | 8% | 1,000 | 0% | 214,980 | 92% |
| West Virginia U. School of Medicine | 60 | 216,000 | 3,600 | 16,000 | 8% | — | — | 200,000 | 92% |

Arizona has a larger population than any of the other states in the West without medical schools, and in fact is larger than Utah which does have a medical school. The Western states having medical schools tend to have more physicians per population unit than do states without medical schools. Nevada is the only exception to this rule. It would therefore seem that Arizona is the most likely state to build a medical school, having the largest population, the most rapidly increasing population, and the most suitable metropolitan area.

The expense of training a medical student varies between the different schools that have established figures between \$7,000 and \$30,000 a year. It can be accepted that at least the cost will be \$10,000 to \$15,000 a year. The present cost to us under the Western Interstate's program is approximately \$2,500 a year per medical student. This means that we could save considerably more with our present program if the remainder of the states would allow us to go along in this manner. This is a questionable assumption.

To run a medical school economically it would necessitate at least 50 students per class. At present it is questionable that Arizona could supply this number of students, even anticipating that many would study medicine who are now denied that privilege, because of their financial circumstances, and who would be able to attend a school within their state.

The University of Utah at present has a total investment of \$1,262,000 in buildings, \$640,000 in equipment, a total of approximately \$1,900,000. This does not include hospital teaching facilities. They are attempting to establish a new medical center which will cost approximately \$10 million for the essential facilities only. The annual operating expense is \$670,000. It is anticipated this will be \$870,000 for the 1957 to 1958 fiscal year and \$970,000 for the fiscal year, 1958 to 1959. At present they have 209 students, 55 in the admitting class.

An investigation in August 1956 revealed that the University of Washington has fixed equipment and a capital investment of \$8,263,000, completed with \$3 million for a university hospital. They are to add to this \$11 million for the second university hospital. The annual budget is \$1,760,000. This does not include research grants. They admit 75 students per

year and have a total student body of 300.

By comparison, the annual budget at the University of Arizona is approximately \$6 million. The stated value of the buildings and grounds is \$35 million. It is anticipated that a medical school construction cost would approximate one-third of the University of Arizona budget and half of the University of Arizona building fund.

In 1954, Arizona ranked ninth among the 48 states in total taxes collected per capita and definitely above average in expenditures per capita in higher education. However, it ranks 46th or third from the bottom in the financial support that the University of Arizona receives.

These statistics are relative to the potentialities of the state and the need of the area.* They do not allow for one to conclusively decide whether a medical school should be established in Arizona at the present time, or if one is to be developed, whether it should be a two- or a four-year school, or where it should be established. Certainly the problem deserves additional study.

D.W.N.

*Consideration of the establishment of a medical school demands further that this school be placed in true perspective with other needs in higher education.

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9. Engage in keen, fair competition so the public may obtain the protection it needs at a reasonable price.

Unanimously adopted at the annual meeting of the Health Insurance Association of America May 7, 1957, in Washington, D. C.

(Editor's Note:

The above elucidates the ethical standards for insurance practice.

How does one reconcile "engage only in sales methods, promotional practices and other transactions which give primary consideration to the needs, interest and continued satisfaction of the persons insured," when industrial firms and insurance carriers are establishing "closed panel" system? There must be a free choice of the physician by the patient.)

LETTERS TO THE EDITOR

TO the Editor:

This is an entirely new venture for me. But as I sit here watching TV, my main thoughts turn to baseball.

After all, what is this great American game? It's a game that consists of safe hits, home runs, strike-outs, fouls, walks, batting averages. Sometimes an umpire is "killed" just to satisfy those throngs who are watching. They are just everyday plain Americans. Just for convenience, let us call them Big People, and Little People.

What else is on the mind of these Big People and these Little People? Politics is one thing. So, let us reminisce a bit.

In 1933, we were not much of a nation. All the banks were closed. Millions were out of work. Wheat was 30 cents a bushel. The popular song was "Brother Can You Spare a Dime?" We had been living in isolation so long we did

not know there was anyone else in the world. I think there were enough chickens so that we still had one for every pot, I do not think anyone in America died of malnutrition, but we had to kill the little pigs as there was not even room for them in the stable. We struggled along under these handicaps for about eight years, and could not seem to get off the ground. All of a sudden; Bang! Pearl Harbor! Boy, did we strike out!

The Voice

About this time Mr. and Mrs. United States began to get off the ground. Butch O'Hara went to the South Pacific. Douglas MacArthur was already there. Ike Eisenhower went to the Mediterranean. Their names did not mean much then. Then, we began to hear about this man Eisenhower being in London. Preparation for the Western front. Finally on that early

morning, June 6, Ike gave the signal and the English Channel was crossed. That was a grand slam with the bases loaded.

Along about this time an "Immortal Voice" rang out over the radio. It was the voice of that one who had master-minded this whole show — the one who had the courage, the vision, the imagination, and the faith in the greatest scientists in the world, the American scientists. The Voice promised the Japanese that the most terrible instruments of destruction were about to be rained down on them from the skies, but no one knew what he meant.

Time marches on — Hiroshima! Nagasaki! The Japanese were horrified. The world was stunned.

A little man by the name of Harry Truman was now calling the plays. He started right off batting 700. We had the Truman Doctrine, the Marshall Plan, and lots of other problems; 1948 came, and this little man fooled everyone by being elected president of the United States. Then we got into the Korean war. The greatest period of prosperity that had ever occurred descended upon these United States, but things got into a terrible state in Washington. Mink coats, deep freezes.

So then, Mr. and Mrs. United States picked out this man Eisenhower to clean up the mess in Washington, and also Korea. What kind of a man is this Eisenhower? He certainly is a great soldier, and a great statesman. A politician? Well, not so hot, I guess. Why, then, is he President? If I may speak parenthetically for myself at this point, I think he is there by the grace of Almighty God, and because somebody up there loves us.

More About Ike

Ike can probably shake hands with, and call by the first name, more heads of nations than any past presidents of the United States. Particularly, he seems to know those heads of nations in the Near East, and this area has been called the "powder keg" of the world for a couple of generations. Figuratively speaking, they have been playing some baseball in that part of the world. Nothing big, mostly sandlot games.

Some more about President Eisenhower. In 1953, and again in 1957, you heard him dedicate each term to the cause of peace. He prom-

ised a balanced budget, and that you have. You asked for the truth in government, and in due time he presented the budget for 1957. Did you expect him to be a prophet? He knew the price of pork chops in 1953, but he didn't know what the price was going to be in 1957, until 1957 came along. He merely stated that this was the price for peace in 1957, and, boy, how those little people in congress have shouted. Another group of those Little People met in Washington a while back, under the auspices of the United States Chamber of Commerce. They represented the presidents, and high officials of our million and billion dollar corporations. Those little people looked over to and viewed the White House with alarm. What in the world has happened to Ike? Has he lost his mind? Is he a New Dealer in disguise?

Where Were They?

Well, now, where were these little people back there in 1933 when we started this thing from scratch? A few inherited their millions from their forefathers in the last century. A lot of them were in college about that time. Others were probably file clerks in the big corporations of which they now are at the head. Don't forget those little people have hit a lot of home runs in their own companies, and probably paid more income tax in 1956 than any similar group in the country.

Recently a man appeared on TV to talk to the world. It was Ike Eisenhower. He said:

"My friends; I wish to tell you the truth about the budget. This is the cost of peace in the year 1957. This is not 1940. We are now living in the Atomic Age. Peace is the most cherished thing to possess on the face of this earth. All other issues are mere trifles. I feel certain you understand me. Thank you."

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- Lowest Oral Dose In Sulfa History—0.5 Gm. (1 tablet) daily in the usual patient for maintenance of therapeutic blood levels
- Higher Solubility—effective blood concentrations within an hour or two
- Effective Antibacterial Range—exceptional effectiveness in urinary tract infections
- Convenience—the low dose of 0.5 Gm. (1 tablet) per day offers optimum convenience and acceptance to patients

NEW DOSAGE. The recommended adult dose is 1 Gm. (2 tablets or 4 teaspoonfuls of syrup) the first day, followed by 0.5 Gm. (1 tablet or 2 teaspoonfuls of syrup) every day thereafter, or 1 Gm. every other day for mild to moderate infections. In severe infections where prompt, high blood levels are indicated, the initial dose should be 2 Gm. followed by 0.5 Gm. every 24 hours. Dosage in children, according to weight; i.e., a 40 lb. child should receive $\frac{1}{4}$ of the adult dosage. It is recommended that these dosages not be exceeded.

TABLETS: Each tablet contains 0.5 Gm. (7½ grains) of sulfamethoxyypyridazine. Bottles of 24 and 100 tablets.

SYRUP: Each teaspoonful (5 cc.) of caramel-flavored syrup contains 250 mg. of sulfamethoxyypyridazine. Bottle of 4 fl. oz.

1. Nichols, R. L. and Finland, M.: *J. Clin. Med.* 49:410, 1957.

Topics of Current Medical Interest

PRESENT STATUS OF CHEMOTHERAPY IN TUBERCULOSIS

*Report of Committee on Chemotherapy and
Antibiotics,
American College of Chest Physicians*

AS in previous years, this report is not intended as a detailed treatise for chemotherapy of tuberculosis, but rather as a progress report or statement on currently accepted principles and practice to serve as a guide to the physician treating tuberculosis.

General Considerations

At this writing, there is no generally accepted optimum regimen in the chemotherapy of pulmonary tuberculosis. Streptomycin (SM), aminosalicylic (PAS), formerly para-aminosalicylic acid, USP XIV, and isoniazid (INH), are the three most commonly used drugs, but there is no unanimity of opinion as to which combination of these is most effective. However, it is emphasized that the best results are obtained when two or more drugs are combined and given continuously for a prolonged period of time. In general, it is probably unwise ever to treat a case of clinically active tuberculosis with one drug alone unless other drugs are contraindicated. Chemotherapy should be given for at least a year even in minimal cases and in advanced cases for a total of 18 to 24 months, or at least until the stage of inactive disease is reached.

In all cases of tuberculosis, efforts should be made to culture the tubercle bacilli initially and to determine drug susceptibilities. This is essential in re-treatment cases. Susceptibility studies are especially important if cultures remain positive, for changes in drug therapy may be based on changes in susceptibility.

Specific Drugs

The following drugs are useful in treating tuberculosis:

Isoniazid is a potent drug. It is effective at low concentrations, is readily absorbed, and penetrates all tissues of the body. It is easily administered and is relatively nontoxic, with good patient acceptance. The most commonly

accepted dosage of INH at the present time is 4 to 5 mg. per kg. of body weight daily, in two or three divided doses. It is estimated that some individuals will have inadequate serum levels of INH as measured by bio-assay on this dosage level. Evidence is at hand that about 85 per cent of patients with new tuberculosis will do well on standard doses of INH (300 mg. per day), in combination with other effective drugs. In the other 15 per cent, particularly in patients with more advanced disease with large or multiple cavities, it is probably advisable to individualize the dosage of the drug with consideration given to higher dosage. Toxic effects of this drug, particularly peripheral neuritis, are commoner at the higher levels and pyridoxine (100 mg. per day) must be administered concurrently whenever the higher dosages are to be used. Hypersensitivity reactions may occur in the use of this drug as with streptomycin or PAS.

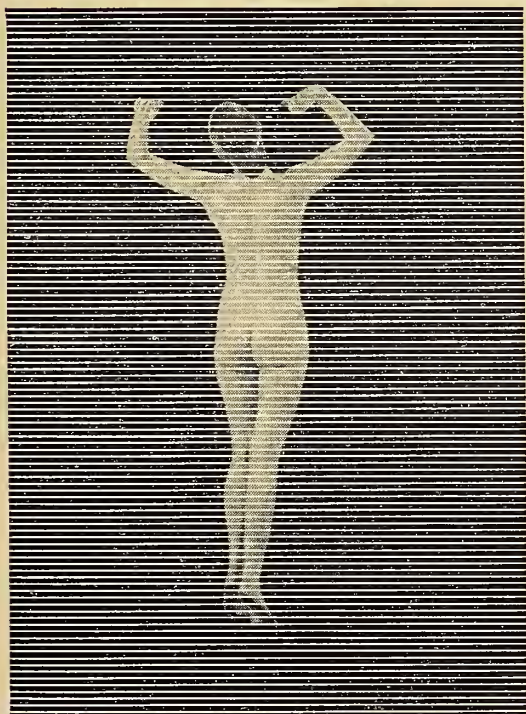
There are two major facts to be kept in mind in the use of INH: (1) As with most of the other effective drugs the tubercle bacilli readily becomes resistant to this drug when it is administered alone; (2) Isoniazid is degraded in human subjects into several derivatives, such as acetylisoniazid, which are biologically inactive; such inactivation varies significantly from individual to individual. Serum levels of this drug determined by the standard chemical methods will not reveal the inactivation, but it will be evident if bio-assay methods are used.

Streptomycin and Dihydrostreptomycin continue to be among the most effective antituberculosis agents at our disposal. Each has the same therapeutic value and the dosage is the same for both. They are generally administered in a dosage of at least 1 gm, twice weekly by intramuscular injection. In this dosage streptomycin rarely causes vestibular damage and dihydrostreptomycin rarely results in deafness. In an effort to avoid these rather remote possibilities some physicians prefer a combination of streptomycin 0.5 gm. and dihydrostreptomycin 0.5 gm. In studies reported by the British Medical Research Council it was evident that, when administered in combination with daily INH, streptomycin was more effective in preventing the emergence of INH resistant organisms when

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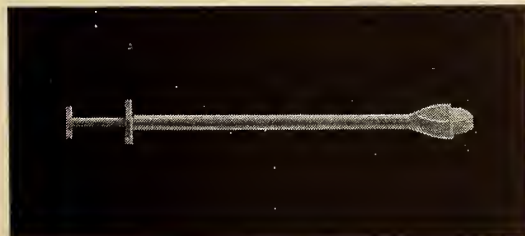
Method of Use

The following therapeutic procedure is suggested: One or two tablets are inserted by the patient each night and each morning; treatment is continued for four to eight weeks.

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SEARLE

given in daily dose of 1 gm. as compared with dose of 1 gm. twice weekly. Preliminary reports are appearing indicating that in some patients, particularly those with advanced disease, intermittent streptomycin may be less effective than daily administration of 1 gm. of this drug. It may be advisable to give streptomycin in doses of 1 gm. daily for at least 30 days to a patient severely ill on admission before reverting to intermittent therapy. Hypersensitivity to streptomycin occurs occasionally and is manifested by fever, rash and sometimes exfoliative dermatitis. In patients with less severe reactions desensitization may be accomplished by starting with a very small dose and gradually increasing; with more severe reactions desensitization may be hazardous and probably should not be attempted. Occasionally, a patient hypersensitive to streptomycin may be able to tolerate dihydrostreptomycin and vice versa.

Aminosalicilic Acid remains an important agent in the antimicrobial therapy of tuberculosis due to its ability to prevent or postpone resistance to streptomycin and INH; and to its ability to enhance the serum levels of active INH. Many forms of this drug are on the market from the acid product to sodium, potassium and calcium salts of the acid, a buffered product, and other forms. The dosage for all of these must be adjusted to the dose of the acid. In other words, 15 gm. of sodium PAS is the equivalent to 12 gm. of acid PAS. Many patients will have less gastrointestinal intolerance on some one of these products than on others. There is some difference in blood levels produced with these drugs. Sodium and potassium PAS, being rapidly absorbed, have rapid peaking and falling off of blood levels, while with other forms a more prolonged peak may be attained. The clinical significance of this is undetermined at the present time.

PAS preparations of all types, if stored too long or exposed to undue heat, light or moisture, deteriorate and discolor, resulting in increased intolerance or actual toxicity. PAS should be prepared fresh if given in solution. Under best conditions, side reactions of anorexia, nausea and diarrhea are not uncommon with all forms of PAS, but are not necessarily indications for discontinuing the drug. Occasional patients develop more severe reactions with fever, rash and rarely with severe systemic reactions simulating infectious mononucleosis.

PAS alone is relatively not very effective as a treatment for tuberculosis and should always be used in combined therapy. It has been shown recently that PAS, when administered concurrently with INH, will enhance the level of free INH in the serum of patients who rapidly inactivate INH. In Europe, intravenous PAS is being used extensively and claims have been made for its value by this route.

The standard dose of PAS in this country is 12 gm. daily in three divided doses, although some studies have indicated that smaller doses of the active substance may well be useful, particularly if full dosage is not tolerated.

Viomycin has a useful though rather limited place in the treatment of the patient whose organisms are resistant to isoniazid and streptomycin and for whom an umbrella is desirable for resectional surgery. The usual dosage is 2 gm. (IM) twice weekly for two or three weeks before surgery and eight to 10 weeks or more post-operatively. When feasible, it should be combined with another drug to which the organisms are sensitive. Renal toxicity precludes the daily use of this drug, but is less evident when used twice weekly.

Pyrazinamide (PZA) is now undergoing clinical investigation by the veterans' administration — armed forces group, the USPHS group, and others, particularly in combinations with isoniazid. It has been found to be effective in combination with INH when administered to patients who have never received either drug before. There is some evidence that this drug may be effective for short periods of 30 to 60 days when used alone, particularly to cover resectional surgery in patients resistant to the other major drugs. In most studies reported, there has been a significant factor of toxic effect on the liver; approximately 10 per cent of the patients receiving pyrazinamide have shown abnormal results in liver function studies and about 3 per cent have shown frank jaundice. When this drug is administered, liver function studies should be done periodically to estimate any liver toxicity. Most of the toxic conditions resulting from the use of this drug, however, revert to normal when the drug is withdrawn. PZA should be discontinued promptly if significant disturbance in liver function is noted and invariably if jaundice appears. At the present time, due to severe toxicity of the drug, it should be administered only to patients in the hospital.

This drug is ordinarily administered in dosage of from 30 to 40 mg. per kg., orally administering no more than 3 gm. daily. Hyperuricemia has been reported in conjunction with the use of PZA.

Cycloserine is a relatively new antibiotic under investigation for use in the treatment of tuberculosis. Preliminary studies have shown that this drug used alone is not as effective in the treatment of tuberculosis as are the various combined drug regimens now in use. At present, studies are in progress to determine the effectiveness of this drug when used in combinations with INH. Reports of toxicity, particularly to the nervous system, have continued such as tremors, drowsiness, convulsions and psychoses. Most investigators originally used this drug in dosage of 1 gm. daily, orally, in divided doses. Newer studies indicate a maintenance of therapeutic effectiveness and nearly complete absence of toxicity when administered in doses of 0.25 gm. twice daily in combination with isoniazid.

Recommended Regimens: Though there is no generally accepted optimum chemotherapy regimen, for pulmonary tuberculosis at the present time recent reports of the veterans' administration — armed forces group and of U. S. Public Health Service-sponsored studies indicate that the following regimens give approximately the same clinical results in most cases of tuberculosis: (1) Isoniazid, 300 mg. daily plus PAS 12 gm. daily; (2) Isoniazid 300 mg. daily plus SM 1 gm. twice weekly, and (3) Isoniazid 300 mg. daily plus SM 1 gm. twice weekly plus PAS 12 gm. daily. The veterans' administration and U. S. Public Health Service studies indicate that the regimen of streptomycin 1 gm. twice weekly and PAS 12 gm. daily is not quite the equal of the other three regimens, and that in far advanced disease with large cavities INH-PAS is superior to intermittent SM-INH.

As has been pointed out above, there is increasing evidence that the drug regimens must be individualized in certain patients, particularly in those with more advanced disease, with larger doses of INH and daily SM being administered as indicated.

Acute Miliary Tuberculosis

Isoniazid has proved to be very effective in the treatment of miliary tuberculosis with survival rates of 90 per cent and higher being re-

ported. Any standard INH-containing combined regimen should be adequate in treating this condition, but due to the serious nature of miliary tuberculosis, many still advocate the use of triple drug therapy with higher dosages of isoniazid such as 10 mg. per kg. per day being used. The drug therapy should be continued for at least 18 months.

Tuberculous Meningitis

Reports during the past several years indicate that survival rates of 80 per cent to 90 per cent or higher are possible in tuberculous meningitis when INH, SM and PAS are administered for a minimum of 24 months. The committee suggests a dosage schedule similar to that for miliary tuberculosis. Intrathecal medication is not recommended. It is of the utmost importance to start the treatment immediately if the history, physical examination or spinal fluid findings strongly suggest a diagnosis of tuberculous meningitis. If the patient's condition does not permit oral medication, the INH and PAS may be given parenterally, initially.

Genitourinary Tuberculosis

Genitourinary tuberculosis responds very well to combined drug therapy including INH, SM and PAS in dosage as recommended for pulmonary tuberculosis. The drug should be administered for 18 to 24 months. Recent reports from the veterans' administration — armed forces study indicate that long-term therapy with INH, SM and PAS is very often definitive in such cases and the need for surgical intervention is becoming surprisingly less frequent.

Tuberculosis in Childhood

The committee recommends that all children with active primary tuberculosis should receive antimicrobial therapy. The complications such as miliary and meningeal tuberculosis which sometimes occur in primary disease have sharply declined since the advent and use of INH. Consideration should be given to the treatment of recent tuberculous converters, particularly in children under four years of age. In children with active tuberculosis, the physician should always be on the alert for the development of miliary or meningeal tuberculosis. The approximate dosages of the antituberculosis drugs for children are as follows: SM 30 to 40 mg./kg. twice weekly, INH 10 to 16 mg./kg./day and PAS 200 mg./kg./day. Children tolerate higher

dosages of INH well and administration of pyridoxin is usually not needed to prevent toxicity.

Other Forms of Tuberculosis

When the disease involves such organs and tissues as the larynx, mouth, lymph nodes, trachea, bronchi, GI tract and bone it is best treated by long term combined chemotherapy using one of the regimens recommended for pulmonary tuberculosis.

Tuberculous Pleurisy with Effusion

This condition should be treated as a case of active pulmonary tuberculosis with long term continuous combined chemotherapy for a year or more. This recommendation also applies to the so-called idiopathic pleurisy with effusion patients with a positive Mantoux even though careful studies fail to reveal presence of tubercle bacilli in the pleural fluid. Experience has shown that in such cases the etiology is usually tuberculous and should be treated as such in order to avoid reactivation later.

Steroid Therapy in Tuberculosis

The exact role of cortisone and related compounds in the management of infectious diseases is undefined. However, the greatest difference of opinion regarding the place of steroids exists in the field of tuberculosis. Some have felt that this form of therapy is always contraindicated while others have recommended its use under certain specific circumstances. Some of the tissue damage and clinical manifestations in tuberculosis are due to an exaggerated interaction between sensitized tissue and tuberculoprotein. Corticosteroids may suppress this overactive defense mechanism with a resulting decrease in the manifestations of illness. In patients seriously ill with tuberculosis of long duration, there is evidence of adrenocortical hypofunction. Steroid therapy used with concomitant antituberculosis chemotherapy often effects striking symptomatic improvement. Thus, without anticipating any change in the ultimate outcome, the use of steroids would appear to be justified, if only for its symptomatic effect, in patients hopelessly ill with advanced tuberculosis. In acute forms of tuberculosis associated with severe clinical illness, steroids may be helpful. This is especially true of miliary and meningeal tuberculosis. In the latter condition, prevention and relief of cerebrospinal fluid block has been attributed to steroids.

BED REST IN PULMONARY TUBERCULOSIS

Report of the sub-committee on Bed Rest in Pulmonary Tuberculosis

THERE has been some moderate relaxation in the strictness of the application of bed rest in the treatment of pulmonary tuberculosis since the advent of anti-tuberculosis chemotherapy, but it is generally considered as a basic requirement of therapy. This is true in spite of deliberate programs in some areas to de-emphasize the importance of bed rest for the purpose of investigation.

In discussions of the treatment of tuberculosis, the intense interest in methods of use of the various drugs has occupied the attention of the phthisiologist to such a degree that little has been said about the need of rest as a basic part of therapy. To the men in active practice of chest diseases, this need is generally understood and accepted, but to the person who casually reviews the literature, it is easy to gain an erroneous impression regarding the over-all program of tuberculosis treatment. Since an increasing amount of tuberculosis is being cared for by those not specially trained in this disease, the lack of information regarding the whole treatment picture can lead to disastrous results. It is the feeling of this committee that a strong statement should be made reaffirming the importance of bed rest and its proved value in the regimen of tuberculosis treatment and that this statement should receive the widest possible attention. It is believed that bed rest should be maintained until the lesion is stabilized, as indicated by bacteriologic, x-ray, and clinical evidence.

This committee also wishes to reaffirm the desirability of at least starting the patient's care under sanatorium conditions for the purpose of patient indoctrination, the evaluation of his clinical problem, and the initiation of the various therapies.

Sub-committee on Bed Rest in Pulmonary Tuberculosis

Buford H. Wardrip, San Jose, Calif., chairman
Thomas G. Heaton, Toronto, Canada
Leon H. Hirsh, Milwaukee, Wis.
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THE PHYSICIAN LOOKS AT THE PHARMACEUTICAL MANUFACTURER — AND VICE VERSA

By Edmund R. Beckwith, Jr.*

YOU will expect me to say I am privileged to be here. You will expect me to say I am happy to be here. But you may wonder if I really mean it. The fact is that I do.

It is a rare opportunity that any of us has to reflect beyond the immediate horizons of our daily pressures. The invitation to be here has forced me into both subjective and objective reflection about our entire public health industry. Thus, I have already gained much from your generous invitation:

But I am grateful, too, for the occasion to demonstrate, I hope, that those of us who represent the pharmaceutical manufacturer are human, possessed of human wisdom and human limits of judgment, are maybe even a bit likable, and above all are continuously concerned with you and with your problems.

You as individuals may well have complaints about the operations of individual pharmaceutical companies or about them as a group. We must always be sensitive to your feelings. We must be aware of the reasons. And then we are faced with the critical problem of evaluating what these criticisms mean to us as business men.

If you will, please take special note of that word. Most people who share in the vital decisions of a pharmaceutical company are business men. True, some are physicians by training, some are physiologists, some are something else. But essentially the decisions to be made are business decisions.

If to make a profit were the only premise, our task would be a good deal more simple. But there are two important qualifications. The first is this: With no exceptions of which I am aware — if it isn't good medicine, it isn't good business either. Secondly, there is coming more and more a responsibility upon the manufacturer for activities, expenditures, and foresight in public health areas which are not directly related to the manufacture and sale of drugs. For those whose companies are international in scope, this is rapidly becoming a most pressing matter.

The hard core remains that we are in business and that the game is to make a profit this year bigger than last, and next year bigger than this. But we must do it within the context of these two profound qualifications.

Our relationships touch many groups of people: the wholesale druggist, the administrative staffs of hospitals, the government, the retail pharmacist, the physician, the patient. The most important of these, both to you and to us, is the patient.

I hope that you will bear in mind that each of us is a prisoner of his own experience. Hence, much of what I will have to say evolves from my own firsthand knowledge of what we may do as one organization or from direct observation of what our competitors are doing. I will merely let that general qualification apply to everything from here on.

Seven Points

Because you are the funnel through which all of our activities must pass, we would be unwise, indeed, if we did not attempt continuously to understand your problems, to understand your thinking, to adjust ourselves to changes in both. There are many mechanisms available to us. Sometimes the problem is that we have too much information or that we have contradictory information, or that we don't understand the implications of what we have. We are keenly aware of many of your complaints. I have selected seven to discuss that seem most important to me:

1. Promotion is too expensive.
2. Drug prices are high and are too variable.
3. There are too many similar products.
4. Information reaches the public too soon.
5. Drugs should not be sold over the retail pharmacy counter, but only on prescription.
6. The manufacturer makes exaggerated claims.
7. Manufacturers make too much money.

Now, let's take these one at a time: One might say, "Cut down pharmaceutical promotion and lower the price to the patient." In principle, this may be right. But this assumes on one hand that less promotion would produce the same sales and on the other that those of us responsible for the promotion of drugs know far more than we do. We are still trying to find out what the relative values are and what the changing relationships are of money spent in direct

*President of Crookes-Barnes Laboratory. Delivered before the Medical Society of Union County, N. J. Reprinted by permission.

mail, or in journal advertising, or in television, or in films, or in increased numbers of pharmaceutical detailmen, or in the numbers of samples that we use, or in the form of those samples. We are learning much. Some of it is discouraging.

We know, for example, that you frequently criticize us for samples which are too small. And, let me say here that the size of our sample budgets is a matter of tremendous concern to all of us. There is waste and we know it. But we know from actual testing that despite your criticism, larger samples do not usually produce enough additional business to warrant the cost.

You criticize us for too many pieces of direct mail on the same product. And yet we are faced with demonstrations from our own testing that the quality of the direct mail is often less important than the frequency with which it is mailed.

Availability of the material is often the most important factor. You may recall the story of the chorus girl who was asked what reading material she'd prefer if marooned on a lonely island. Her answer: "A tattooed sailor."

The reading material may have been less than classic, but at least it was at hand. So goes direct mail at times.

We are disturbed that golf outings or fishing parties given by some companies increase sales of their drugs. We are distressed that the paper weight or letter opener seems to produce sales. We would be far more comfortable if so often it did not appear that methods that sell soap also sell drugs.

Two Generalities

For those of us who would like to see pharmaceutical promotion on a completely professional plane, there is still the need to face the fact that we may have actually been underpromoting useful drugs. As time goes on, our allocations of promotional expenditures become more and more precise. But, we are far from, and in my estimation may never reach, the point at which a precise formula will replace experienced judgment and, hence, some measure of error.

Before leaving this question, perhaps two generalities would be helpful. The first is the fact that even an important new drug will not be used if it is not promoted. One could go further and say that an important new drug will not be

used unless the promotion is skillful. Hence, less promotion is not likely to produce the same sales effect.

The second generality is this: Lowered promotion costs would usually result in lower sales, consequently in higher per unit manufacturing costs, and virtually no saving to the patient.

Now, we often hear: "Drugs cost too much and prices vary too much." It would be wrong not to agree that in some cases this is true. The industry is vulnerable, in my opinion, because of one or two situations. Your pressure and the pressure of the patient may in time correct this. If it does, it will be a favor to us all.

In general, however, drugs are not too expensive. The average prescription price for *one-half billion* prescriptions filled last year was \$2.63. Drugs, taken as a generic term, are not too expensive.

Most of the drugs for which you write prescriptions are post-World War II developments. In terms of the research expenditures behind them, they are not expensive, any more than the cost of an office visit is not expensive in terms of the money you have invested in your preparation (or education). The average annual investment for all of the principal pharmaceutical manufacturers is 5 per cent of their net sales or equivalent to about half of their net profits. In a number of cases, companies are spending 10 cents of every incoming dollar on research and figure their gambles at odds of 50 to 1.

Now, prices to the patient do vary widely. Here's an interesting example: In shopping one of our products in 48 retail stores, our first objective was to find out whether these stores dispensed the drug exactly as it was prescribed. Incidentally, they all did. For 24 tablets, which cost the pharmacist \$1, the range of prices charged to the patient was from \$1.10 to \$2.50. The most remarkable thing is that 26 stores charged *below* a reasonable mark-up (and, incidentally, lost money on the transaction). Eighteen charged a reasonable price. Only four priced the prescription exorbitantly. We have seen this pattern repeatedly.

Prescription prices vary for several reasons. The pharmacist is an individual professional operator. He is entitled to charge what he thinks he must to stay in business. Some pharmacists, like some manufacturers, like some physicians, are not as good business men as they

should be. The exorbitant price is probably as often a reflection of poor business practice as it is of greed.

Pots and Pans Pay

Prices vary also depending on the type of store and the location. It's a curious thing that you as physicians would like to see pharmacies of almost a completely professional character without the pots and pans, the chow mein, the luggage, the children's toys, phonograph records, and the like. However, the more nearly a store approaches what you would like it to be, the more the pharmacist is faced with employing only professional personnel and with stocking only expensive inventories that turn over less rapidly. Hence, the more the store is what you wish, the higher its prescription prices.

Let me demonstrate: The super market might buy a loaf of bread for 19 cents and charge 21 cents. This is a 10 per cent mark-up. But because of his traffic studies, this operator can estimate very closely the actual amount of bread he will sell each day in the week. And, if he doesn't sell it, the baker takes it back anyway and he doesn't have to pay for it. The next day he spends the same 19 cents for another loaf and at the end of the week he has made 12 cents on that one investment — made six times. This is rapid turnover — several times a week — at a low mark-up.

Drugs, however, stay on the shelf until you prescribe them. What's more, while the super market stocks only a few brands — only the fast-selling brands — to provide you with good service, the pharmacist carries both the drug brands you prefer, and the brands your colleague down the street prefers, even if you should prescribe an item but once a year.

The average pharmacy can count on a turnover of its stock a little less than twice a year. The average store carries about 8,000 items. The sanitary products, the cosmetics, the perfumes all help to pay the overhead of electric light bills, insurance, and rent. But the professional store which does not carry such items must depend upon higher prescription prices to offset high wages and slow turnover of stock.

You are sometimes critical of "Too many similar products on the market." Unfortunately, you are more right than you know. Let's take as a starting premise the fact that you would not like to have this solved by government regu-

lation. Then, we have got to consider this as a problem of the market place. There are too many reserpines. As a matter of fact, there may be 100. There are 88 thyroids available. There are 200 antacids in your Physician's Desk Reference. There are so many multiple vitamin products, I have no idea what the actual total is. I am reminded of the fact that when one research organization was doing studies of the vitamin market for a substantial number of clients, one of the clients remarked in exasperation: "The only people making money on vitamins are you people who measure the sales."

Last year there were about 480 new products or additional dosage forms put on the market. Less than 10 per cent of these will be commercial successes. We are all getting more cautious in each succeeding year in the introduction of new products because the odds are fantastically against their success, and because the cost is getting to be so great. A new product to us today may represent a half million to a million dollar marketing decision, and this we cannot take lightly.

Healthful Competition

This competition, however, of similar products keeps the industry healthy, allows you to change from the product of one company to that of another, and, if you will, keeps us all virtuous. This may be a wasteful system, but so is the system that has 73 medical schools competing for faculty, students and grants, and so is the system that has individual state health departments and individual municipal governments. If we did not have this kind of system, you would not have two companies battling each other for your prescriptions of a similar chemical. You would not have us embroiled in a thousand ways with our competitors. We would get soft. We would probably over-price and under-promote. Our incentive would be reduced to do research in new fields, or to improve the products we already have.

Don't misunderstand me. Even the cruel discipline of the market place will never completely resolve this problem. My thesis to you would be that the waste is worth the benefit, for year by year it forces our judgment to be more perceptive and more precise.

You charge us with "publicity that reaches the newspapers and radio, or television too soon and too spectacularly." To this we must plead

guilty. We are, as an industry, infants in the realm of publicity and public relations. Our own organization has been faced with this for a number of years and almost daily we are confronted with new problems. I was appalled to read in a national magazine not long ago a statement attributed to three physicians from one of our most respectable research centers involving a chemical with which we are intimately connected. The clinical work is so premature we don't believe it ourselves. And yet this tipped into the public domain and, incidentally, to our competitors.

We were not at fault, and frankly, I don't think the physicians involved were either. Nor am I leading up here to a condemnation of science writers, for I have a very high respect for their ability and their integrity.

The question of the public's right to medical knowledge is a difficult one. In 1923, all consumer magazines combined ran a total of 30 medical articles, 19 of them on TB. In 1953, just 30 years later, there were 299 medical articles and scientific pieces in national magazines. This kind of copy sells, not because the editors wish it that way, but because the public is insatiable.

Whereas we as manufacturers have had in the last 20 years to become accustomed to and to accept the regulations imposed upon us by the federal government, and therefore to live in a fishbowl of inspection, the physician, too, is having to become accustomed to the fishbowl of public scientific interest and knowledge.

Do we as manufacturers use these avenues to excess? Yes, I think that we are perhaps inclined to. But there is no solution for this except the individual experience of the individual manufacturer. One company made a public relations mistake five years ago — an innocent one. It was an act of good faith and naivete. Since then, this bitter mistake has cost an estimated \$2 million in sales. Believe me, I doubt that organization will ever be guilty again of a similar error.

Together we must face two simple facts. One: People want scientific reading material. They will get it one way or another. All of us are better off giving them good material than leaving this to chance. Medical societies all over the country are now following this course of taking an adult public into their confidence. Two: Although it may seem cumbersome and slow to

you, where a manufacturer is guilty of excess, he will eventually pay the price and he will learn his lesson.

Labeling

You frequently express strong reactions about the labeling of some products. You would prefer to see the drugs you use with a "prescription legend only." Sometimes we are faced with criticism so strong that you cease prescribing products when you discover that they may be purchased over-the-counter. Fortunately this is one spot where the answer is quite simple.

The Durham-Humphrey law, under which the food and drug administration operates, and the food and drug administration regulations make our situation quite clear. A drug which can be labeled with adequate directions which will make it safe for the layman to purchase and to use without a physician's advice *must* be labeled for over-the-counter sale. A drug which cannot be used by the layman without a physician's diagnosis and instructions, must be labeled with a prescription legend. It is the manufacturer's decision, but not his choice.

Now, an interesting aspect of this is that the decision rests with the manufacturer. This is in keeping with our American philosophy of government. The food and drug administration is not a top sergeant empowered to dictate each step a manufacturer takes. The food and drug administration is a policeman empowered to enforce the law when the law is broken. This distinction is most important.

In actual operation, we on occasion have been requested to change the legend on drugs of our manufacture to over-the-counter. When we have been requested to do so, we are in the same position as the automobile driver who is told he cannot park so close to a fire plug. He can refuse to move and later argue it out in court, or he can move.

The labeling on a product is the result of the most careful consideration as to its safety in the hands of the layman. We cannot choose the labeling for some supposed economic gain.

You accuse us of exaggerated claims. Another way of saying this, and perhaps a more kindly way from the manufacturer's point of view, is that you accuse us of basing claims on inadequate evidence. On occasion, it turns out that you are right.

Let's assume on one hand that some of us are occasionally guilty of promising performance from a drug which it can't provide. The solution is for you to register your feelings directly with the manufacturer. You would be surprised to hear how few letters physicians write expressing doubt in this area.

But there is an aspect here of considerable intellectual interest. We have become so accustomed to coming to you with reprints, abstracts, fragmentary reports of work done by physicians in research centers or medical schools, that you have been acclimatized to believe only reports of other physicians. What this really means is that you don't believe us.

The blame is on us. But the fact is that we should always have more information than appears in any one report or even in all the published reports about a drug, for by the nature of our clinical research operations, we collect hundreds of case histories in the form of personal communications and unpublished reports from other physicians.

I don't know the answer to this, but I find it intensely disturbing. I hope that in the next few years we can so conduct our businesses that we can reverse this situation. It hurts our pride to be accused of making claims based on inadequate information when actually we have far more than we are able to disclose.

This is no time for excuses, but this problem is a most intricate one. For example, just a few weeks ago there was in Washington a large meeting of clinicians, government people and manufacturers to discuss a mammoth study of tranquilizing drugs. Most important point to come out of three hard days' work: The clinicians could not suggest benchmarks which they themselves would consider valid. It is always extremely difficult to establish firm criteria and to get any two physicians to deal with a clinical problem in exactly the same way. And, of course, it is sometimes nearly impossible to say at the outset what it is precisely that one is searching for, or else it wouldn't be searching.

Matter of Pride

Despite the difficulties, it hurts our pride to be in a position in which you don't believe us. And whether we can ever get to the position where you feel that if company A says something, it must be right, or if company B says

something, it can't possibly be otherwise, then we will have accomplished a great deal. This will come about possibly if you continue to distinguish between those companies whose words you trust and those you don't. I think it would be well if more and more you drew this distinction, and if you registered your complaints directly and forcefully.

Now this is possibly the touchiest of all subjects: You say we are making too much money. In some cases — in some years — this is true. However, the bonanza years of a few companies tend to obscure the general picture.

Let's assume for the moment that a given company introduces a new drug. The preparation may be such a departure from previous therapeutic items that it will take two or three years for competitors to catch up. Even such a drug will not begin rapidly, but by the second year will be selling in very high volume. By the third, it may be truly of magnificent proportions.

The company fortunate enough to find such a drug will normally expand its promotional effort, its manufacturing effort, and its research effort. But it would be most unwise to expand more than a limited amount in relation to the climb of sales. One would be foolish to take on fixed expenditures when the likelihood is that not more than one, or two, or three bonanza years can be counted on. This does not mean that in those years the profits of that one company are too high when regarded as a percentage of sales.

There is another factor also. In some cases, sheer good management of a business has created a profit structure which becomes a bear by the tail. One company I know of, by the change of its distribution policies has dramatically changed its profit structure. Four years ago, it cost that company \$1,150,000 for all of the processes involved in receiving an order, editing it, tabulating, packing, shipping and collecting. It cost this much when the sales volume was \$10 million. Three years later when the sales volume had risen to \$20 million, the cost for these same functions had been reduced to \$850,000. To me, this is another way of saying that skillful management of its distribution had increased the net profit on \$20 million of sales by \$1.5 million before taxes. Others have since 1950 dramatically affected their profits

by the same kind of management.

Now, what can be done? Lower the prices of all products in the line? Possibly. Invest more heavily for the future in terms of promotion and research? This is a better solution. But then there are limits to how much money one can invest wisely. Frankly, on a \$2 million research budget, one could not quickly add \$1 million without tremendous waste. Expansion must be built slowly.

If one cuts prices, *the means for investment* in the future are removed. If one builds slowly, two or three years of unusual profits result.

This is the problem, but in any one year it exists for only a handful of individual companies. For all but a few of the 200 companies in the industry, the normal year will show moderate net figures at the end of the calendar. Our biggest manufacturers in other industries make 15 per cent after taxes. Many manufacturing companies do as well or do better. A pharmaceutical company which annually gambles from five to 10 per cent of its sales dollar on research is certainly entitled to do as well if it can.

Now, there are many other problems that irritate you. You will notice that I have not even

mentioned the detailman. I have not mentioned the problem of the names of drugs. I have not mentioned the fact that sometimes we fall prey to what looks like good consumer advertising, but which has little relationship to the clinical problem. There are many other points, but these seven I think are the critical ones.

There are no easy solutions. A great deal of the trouble stems from the fact that we, too, are human and that despite the scientific attitudes with which we approach our clinical problems and our marketing problems, the fundamental is still one of human judgment. In this area, perfection is simply too much to ask.

It is a pleasure to be with you. I hope that at least one factor has shown through and that is that we are acutely sensitive to your wishes, to your feelings, and to what we hope will be useful to you in the care of the patient. I would come back to one solid axiom: For most of us in the industry, if it isn't god medicine, it isn't good business. And while we are business men engaged in the pursuit of expanded sales and expanded profits, we are guided by the care of the patient as the most important fundamental of all.

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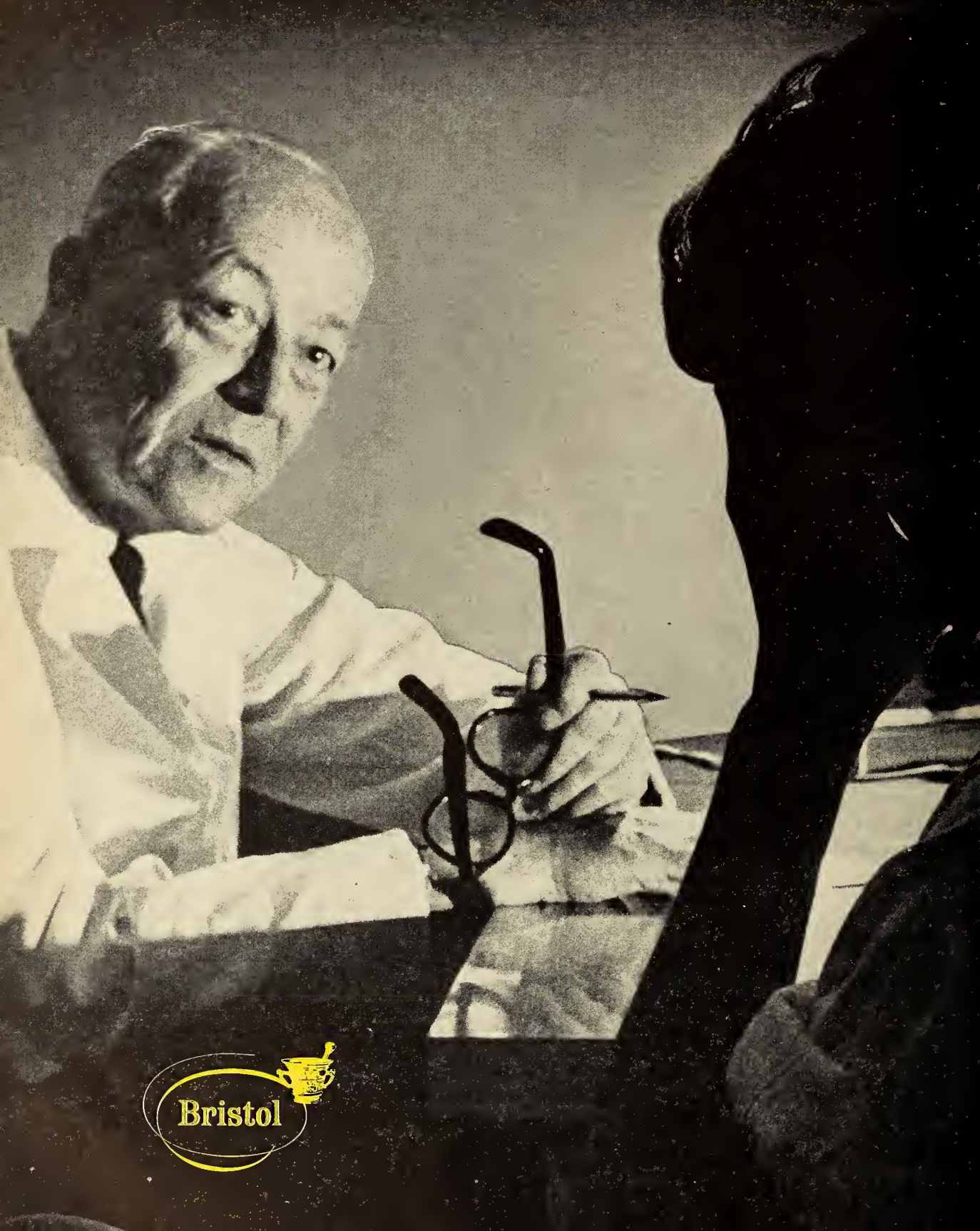
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REPORT OF SUBCOMMITTEE ON INSURANCE MEDICAL FEE EQUALIZATION

THE medical societies are having increasing demands to bargain over fee schedules. The federal government with Medicare for the armed forces dependents, the state government with industrial coverage, and now the many competing private insurance companies as well are asking for some uniform fee schedule plan. The physicians' own plan, the Blue Shield, already has a fee schedule. To have a uniform fee schedule for all plans would eliminate long hours of work by the society members. The society should therefore consider having a uniform fee schedule with possibly a single bargaining committee. The fee schedule could be adjusted to the cost-of-living index and changed with the rise and fall of the cost of living. In 1948 the automobile unions adjusted their wage scale to the cost of living with a one cent adjustment for changes of 1.14 points. By 1959 over eight million workers in various industries will have such salary coverage. Congress uses this index as a guide to federal wage scales. It is suggested that possibly every two years the fees be re-evaluated and if the cost of living has gone up more than five points, the fee schedule should be raised to keep the doctors' fees running on a parallel curve with the cost-of-living index. This bargaining committee could conceivably consider special lower income groups and possibly charge them some fraction of the agreed upon fee schedule provided payment for care comes directly from the concurred group. The same bargaining committee could hear requests for raising and lowering fee schedules and the addition of new fees for new operations and procedures as they are developed in the medical profession. Finally a single committee could gain great experience in bargaining with various groups. Some lay personnel could add to the committee effort by gathering information on a part-time basis.

Other federal employee groups desire the same Medicare program as provided for the armed forces personnel. It is said that the postal workers are at this time requesting such coverage. At the present time the federal government and the state of New York are reportedly considering ways and means of broadening the coverage of government employees

through the use of existing volunteer health insurance plans. The potential coverage here is enormous. If this spreads to other states, it is easy to see that a vast number of people in public employment will eventually be covered by some form of health insurance. Recent newspaper stories from England remind us that the English physician was verbally promised a cost-of-living fee schedule increase, but this was subsequently denied him by the government. Most of the doctors who have been canvassed by this committee feel that the present Medicare fee schedule is adequate or more than adequate. The great question is whether in five years this same remark can be true. We should plan ahead of these trends to protect ourselves. Already the armed forces are trying to have state organizations explain why fee schedules vary for the same procedure. This is an indirect drive toward a nationwide fee schedule and if allowed, we will have the American Medical Association bargaining for all the states.

Hope For Adoption

The Arizona State Industrial Commission has been asked to recognize the relative value (fee) schedule adopted for Medicare by the armed forces and in some measure they have adopted this fee schedule. It is hoped that in the future they will adopt it in its entirety. It would be much more desirable, in any event, to adjust this fee schedule also to the cost of living so that great bargaining hassles can be avoided with the industrial commission in the future. The commission's payments for hospital care have increased much more rapidly than professional fees to the doctors. The same economic factors that raise hospital fees are in operation in the doctor's office. We should plan to protect ourselves from this increase in operating expense in caring for government and insurance protected groups.

Representatives from private insurance companies claim that they are being held back in their competition with the federal and state insurance plans by their need for some uniform fee schedule. Even if we could agree to give them the same schedule given the federal and state governments they would be in a competing

position. Anderson and Feldman, in a recent review, report that private insurance companies nationwide are exceeding the Blue Cross enrollment and appear to be increasing at even a faster rate. This has occurred because the private insurance company underwrites two times as many people on an individual basis as the Blue Cross and Blue Shield in hospital and surgical coverage.

Finally, the Blue Shield plan in our own state points out the need for changes in the fee schedule adjusted to the rising income and cost of living. We, at the present time, have several fee schedules in the Blue Shield pointing up the fact that the earnings of the subscriber have gone up tremendously since the plan was initiated. A recent analysis of the Massachusetts Blue Shield plan appeared on the editorial page of the New England Journal of Medicine with interesting figures in this respect. When their Blue Shield program was initiated, an income of \$2,500 was set as a ceiling. At the time, between 1935 and 1939, this plan was initiated, 91 per cent of the wage earning groups had a family income of less than \$2,500 yearly. At the present time 60 per cent of the families enjoy an income of between \$3,000 and \$15,000. Only nine per cent have \$3,000 or less yearly income. The average family income which was \$2,340 in 1930, had risen to \$5,520 in 1955. This is an increase of 136 per cent. The cost of living over a similar period increased about 90 per cent. The editorial further advocated a new fee schedule with cost-of-living raises in the future.

288 Million Policyholders

We are told that now about 80 per cent of the people admitted to local hospitals have insurance coverage of some type. Some additional statistics on a nationwide basis along this line might be interesting. The insurance coverage for patients admitted to the hospital since 1941 has increased tenfold. The surgical expense protection has increased 18 times. Since 1945, medical expense insurance has increased 14 times. Estimates by the Health Insurance Council disclose that in May 1957, 118 million people were covered by hospitalization insurance, 103 million were covered for surgical expenses, and 67 million for medical expenses. I think most of us would like to see an even greater number of our patients covered by some type

of insurance program. All of us would agree that it is far better to have this done by private insurance companies than by the federal government.

This committee should consider attaching some type of cost-of-living clause agreements to all of our insurance plans. We will certainly expect and plan to take a smaller fee if depressions come and by the same token, we should expect a larger fee schedule in times of inflation. We have, in principle, established a fee schedule when we set a fee schedule for Medicare, as well as Blue Shield and the industrial commission. I think we should go one step further and set a fee schedule that allows private insurance companies to compete with governmental insurance plans on an equal basis.

All of our schedules with Medicare, Blue Shield and the industrial commission, as well as arrangements with private insurance companies, would have inserted a clause, for our protection, based upon the cost-of-living index. No one knows what the future holds, but all of these plans are still fluid. It may not remain so indefinitely. Active efforts are being made by private insurance companies to create plans to meet the peoples' needs and we should consider means of modifying those plans to meet our needs. These companies are now asking for co-operation. A cost-of-living index clause might be contracted for over a specified period of years, for example, 10 years. In this fashion, our state society could serve as a "pilot study" medium for the rest of the country. In addition, we would have the opportunity to decide whether we would like to continue such a plan in the future.

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SOCIAL SECURITY AMENDMENTS OF 1958

J. D. Hamer, M.D.

Introduced: Aug. 27, 1957. HR 9467.

Committee: Ways and Means of the House of Representatives.

Purpose: To amend the Social Security Act to increase benefits under the old-age, survivors, and disability insurance programs, and to provide insurance against hospital and surgical services for persons eligible for retirement benefits.

Provisions: This bill contains three major revisions of the present Social Security Act. It would: (1) initiate hospital, nursing care and surgical payments for persons eligible for retirement or survivorship benefits under OASI; (2) increase the earnings formula under which persons would be taxed up to the first \$6,000 of earnings (present limit is \$4,200); and (3) increase dollar benefits payable to workers, their dependents, and survivors. The author estimates that under this proposal 12 or 13 million persons could receive medical protection payments in the first year.

The author stated on the floor of the house following the bill's introduction — "I am grateful that President George Meany of the AFL-CIO has endorsed my proposed amendments as necessary, sound and enlightened."

Those eligible for such benefits include persons receiving OASI benefits or *persons eligible* for such benefits; this includes both the retired workers and any of their beneficiaries and survivors, but not those entitled to disability benefits.

The proposed medical benefits would pay the cost of hospital care for 60 days in any year in semi-private accommodations and nursing home care up to a combined total of 120 days in a 12-month period. Financed also would be the cost of necessary surgical care (not elective surgery) with freedom to choose a surgeon of the beneficiary's choice, provided the surgeon is certified by the Board of Surgery (American Board of Surgery), or is a member of the American College of Surgeons, (except in cases of emergency.) (One wonders how the members of the American Academy of General Practice will like that provision?), except those who may be certified also by the above specialty boards.

For oral surgery the patient would also be privileged to select a duly licensed dentist of his choice.

Hospital care could be received only in those hospitals which had entered into an agreement for payment with the government. Eligible nursing homes would be only those where skilled nursing care could be obtained and which were operated in connection with a hospital or in which nursing care and medical services are prescribed by, or performed under the general direction of, persons licensed to practice medicine or surgery in the state. Necessary minor surgery or surgery in case of emergency would be permitted in a doctor's office.

Physicians would be paid in such amounts as prescribed in regulations promulgated by the secretary of HEW. Agreements with hospitals would be made with any such institution other than a tuberculosis or mental hospital, provided it is licensed as a hospital or nursing home pursuant to the law of the state in which it is located. Such institutions would not receive payment if payment were due under a workmen's compensation law or plan of any state or the United States. In the event that the OASI trust fund would pay for hospital and other medical services and where, subsequently, it is determined a workmen's compensation or other state or federal plan is liable for such expenses, then the United States would be subrogated to all rights of the beneficiary or the provider of services to whom payment has already been made.

The secretary of HEW could utilize the services of private nonprofit organizations which: (a) represent qualified providers of hospital, nurse-home, or surgical services; or, (b) operate voluntary health insurance plans. These nonprofit groups could be utilized as fiscal agents; but only to the extent that the secretary of HEW "can make satisfactory arrangements with them and to the extent he determines that such utilization will contribute to the effective and economical administration of this section."

A national advisory health council would consult with the secretary of HEW. The council would consist of the commissioner of social security, who would serve as chairman ex officio, and eight members appointed by the secretary (four persons outstanding in the field pertaining to hospital and health activities, and the other four members to represent the consumers

of hospital, nurse-home and surgical services.)

The medical benefits under this proposal would be in addition to the dollar retirement or survivor payments already provided for in the social security law. For example a retired worker requiring a 20-day hospitalization and 100 days of nurse-home care in a 12-month period could, during all of that continuous stay, receive his bed, board and complete medical and subsistence care and still continue to receive up to a maximum retirement payment of \$151.80 per month.

This bill would increase cash monthly benefits across the board. For instance, future beneficiaries' maximum individual monthly benefits would become \$151.80 instead of \$108.50. Family benefits would be increased so that the maximum monthly benefits could reach \$305, instead of the present \$200.

To finance the cost of this entire proposal, including these additional medical benefits, the bill would increase the base on which wage-earners are taxed from the present \$4,000 to \$6,000. In addition, it would increase the present rates of contribution of employees and employers by half of one per cent each in 1959, and the *self employed* would pay three-fourths

of one per cent *more* based upon the proposed \$6,000 annual maximum. By 1975, the rate of tax outlined in this bill for employees would be 4.75 per cent and the like tax would be imposed on their employers for a total of 9.5 per cent of wages up to \$6,000 annually. For the self-employed persons, the tax would be equal to 7½ on the first \$6,000 of self employment income (the maximum payment would be \$427.50 annually), and so on higher and higher taxation beyond 1975.

A one per cent increase in the tax rate as here proposed would yield the social security trust fund approximately \$2 billion. Apparently, the author estimated the average cost for each of the approximately 13 million persons who would benefit by the proposed health care amendment would be about \$150 annually. To multiply that amount by the number of persons to be benefited would result in a total of approximately \$2 billion annually also. In raising the tax base from \$4,200 to \$6,000, the author proposes to raise sufficient funds to finance the increases in dollar payments for retirement benefits; therefore, the rate increase would be assigned solely to finance the hospitalization and surgical benefits.

MEDICAL CARE OF THE INDIGENT

IN the old days, now all but forgotten, public assistance probably was not too efficient and sometimes it was erratic. But it was a simple operation. The local community was expected to take care of the food, clothing and housing needs of its own poor. The doctors and the hospitals undertook to give them medical care for nothing, or at most for a token charge. The doctors were little concerned about the political ramifications of public assistance, nor were others who helped out the indigent families. Over the years the picture has changed vastly. In 1936 the federal government started passing out money to the states with the stipulation that the states add money of their own and use it to support certain categories of the indigent. Since that time, the U. S. contribution for public assistance has increased about 700 per cent. With

this growth in public assistance payments, there has been, particularly since 1950, a parallel growth in public payments for the *medical care* of the indigent. At present, public assistance money intended for medical care — for physicians, hospitals, nurses, dentists, druggists — probably totals well over half a billion dollars a year, when state, federal and local contributions are all considered. This phenomenal medical-social-economic-political development is having and will have repercussions on medical practice, for good or bad. The American Medical Association, through studies over the years, has established principles covering medical care of the indigent. The council on medical service has been concerned with the problem, and has kept in close touch with developments through studies and conferences with the federal officials involved. For further information in this field write to the council at AMA, Chicago headquarters.

THOMAS H. ALPIN, M.D.

DOCTOR FEES BELOW OTHER HEALTH COSTS

A REPORT in the Monthly Labor Review on medical care costs in the cost of living index notes that in the past 20 years hospital costs have risen sharply in contrast to physicians' fees. The article by a bureau of labor statistics employee lists these increases between 1936 and 1956: hospital room rates, 264.8 per cent; dentists' fees, 82.1 per cent; general practitioners' fees, 72.8 per cent, and surgeons' fees, 59.5

per cent. In the same period, medical care costs generally have lagged behind costs for food, personal care other than medical and clothing. The report makes this observation: "With the higher level of living attained in 1950, relative expenditures for medical care tended to increase as incomes increased, as is usually true of items considered as 'necessities' in the family budget. The fact that this pattern has begun to appear in the spending of workers' families indicates the high order of importance they place on medical care. . . ."

THE EDUCATIONAL COUNCIL FOR FOREIGN MEDICAL GRADUATES

By Elmer W. Schnoor, M.D.

Member, Executive Committee Educational Council for Foreign Medical Graduates
President, State Board of Registration in Medicine, State of Michigan

THE Federation of State Medical Boards of the United States is an organization of state medical examining boards interested in the educational competence of medical school graduates preparing to enter the medical profession. These examining boards are all legally constituted under practice acts as enacted by state legislatures to promote the best interests of the public in the field of medical licensure with emphasis on educational standards. All boards stress minimum education and medical training for competency of medical practice. Licensure to practice is a means of public protection and assures a specific amount of educational attainment and fulfillment of state practice act legal requirements.

The medical profession and its associated groups are concerned with medical care and are continually striving to maintain the highest type of medical service for the welfare and benefit of our people.

Progress in medical education in the United States is developed and advanced by co-operation of the American Medical Association, Association of American Medical Colleges, the Federation of State Medical Examining Boards, and the Association of American Hospitals.

Progress of post-graduate continuing education in our country in the past 10 years has taken a remarkable change. The former methods of obtaining post-graduate education are

gradually disappearing and being supplanted by superior methods in approved teaching hospitals with advanced types of internships, specialized residencies and growing research activities. Medical schools, teaching hospitals and the medical profession have become more closely allied in medical progress than in any previous era of medicine.

Recent devastating wars have resulted in marked deterioration of foreign medical education standards. Superior educational opportunities in the United States in conjunction with recent political and social events have caused the state department to permit entrance of large numbers of foreign-trained physicians to the United States. Proper evidence of educational attainment in medicine of these foreign medical graduates whether for licensure or for post-graduate study in the United States hospitals is difficult to obtain.

The Council of Medical Education and Hospitals and the Federation of State Boards met in Washington, D. C., in April 1954, with 22 different educational organizations interested in medical education for an all-day discussion of the foreign medical graduate problem. In this meeting, the federation revealed that one state in its organization had developed, since 1951, a screening examination process for evaluation of each individual foreign medical graduate applicant meeting acceptable minimum education standards. In concluding this meeting, Dr. Weiskotten, chairman, voiced the challenge of future procedure suggestions be placed in the hands of the Federation of State Medical Boards of the United States.

Screening Needed

The state department, like the Federation of State Medical Boards and the Council of Edu-

cation and Hospitals of the American Medical Association has become concerned, as the general level of medical education of foreign medical graduates is considerably lower than in the United States. The appointment of students from such countries could very well adversely affect medical service in the United States hospitals where such foreign medical graduates would seek education, with unfortunate results not only to our medical profession, but also to the exchange program.

Hospitals in the United States which accept foreign medical graduates have not had available any adequate means for determining the medical qualifications of these emigres whether on permanent or temporary visa for education in the United States. Many of these foreign graduates have come to the United States at the invitation of these hospitals, since they are desperately in need of interns or residents.

The American medical profession and interested groups in health and welfare have a definite responsibility to uphold our standards and also prevent discrimination against our own medical graduates. The listing of some 50 foreign medical schools after examination by the Council on Medical Education and Hospitals, since 1950, to be considered on a comparable educational basis with our own approved schools, became inadequate as numbers of foreign graduates came from many of the other 500 medical schools in 84 countries.

The federation group, after many meetings and discussions with the council on education and hospitals, the Association of American Medical Colleges and the Association of American Hospitals, aided in the formation of the Co-operating Committee on Graduates of Foreign Medical Schools following presentation of its purpose to the board of trustees of the American Medical Association in San Francisco and again in Miami and Atlantic City.

The following principles were adopted after sanction by parent bodies of members of the co-operating committee to give guidance for the objective in future considerations and debate at its meetings:

1. Although the responsibility to share educational opportunities in medicine is recognized, the primary concern must be for the health care of the American public. Thus, before assuming responsibility for the care of patients as interns or residents, all graduates of foreign medi-

cal schools (immigrants, exchange students, and American graduates of foreign medical schools) should give evidence, as nearly as can be measured, of having reached a level of educational attainment comparable to that of students in American schools at the time of graduation.

2. The primary objective of this committee is to devise an effective mechanism for measuring educational attainment in the absence of intimate and continuing knowledge of the educational background of foreign-trained physicians seeking position as interns or residents. It should not interfere with the hospital's privilege of making its own selection among qualified physicians. It should not serve as a substitute for, or interfere with the normal licensure procedures of the various state boards, although the program may be helpful to the boards.

3. It is not intended that this mechanism be applicable to those foreign medical school graduates in the United States as temporary students participating in programs of medical and related studies in recognized universities, medical schools, and postgraduate schools, who by the very nature of their study are not involved in the responsibility of patient care.

It is the belief of the co-operating committee that implementation of its proposed program will afford hospitals needed assurance in regard to the medical qualifications of foreign-trained physicians seeking positions as interns and residents. This program represents an extension of foreign graduates on the same principle that has proved its value and long been in effect for American graduates.

Proposed Program

The emphasis in this program is placed on evaluating the medical qualifications of the individual foreign-trained physician who wishes to come to the United States, rather than attempting to evaluate on a continuing basis the educational programs of the hundreds of foreign medical schools that serve as potential sources of these foreign-trained physicians.

The program is designed to establish two principal criteria in regard to each such foreign-trained physician: (1) that he is a graduate of a bona fide medical school and (2) that, as nearly as can be measured, he has reached a level of educational attainment comparable to that of students in American schools at the time of graduation. These criteria are to be established

by evaluation of the foreign-trained physician's medical credentials in view of predetermined minimal standards and by examination of the foreign-trained physician for factual knowledge of medicine.

Evaluation of Medical Credentials

The basic requirements listed below must be met in order for the foreign-trained physician's credentials to be considered satisfactory. As evidence of fulfillment of these requirements, the candidate should present medical credentials in original form with an acceptable English translation. These credentials, together with the bona fide status of the medical school, should be verified by the American consul in the country in which the school of graduation is located.

Basic Requirements

1. A minimum of 18 years of total formal education.

2. Included in this minimum of 18 years of total formal education should be a minimum of 32 months of attendance and direct study of medicine, excluding any time devoted to what in the United States would be considered as pre-medical study or internship.

3. In any country where the minimum standards stated above do not constitute sufficient educational achievement to acquire licensure in that country, the latter rather than the minimum previously described would be required. Although it would be expected that licensure would be achieved in the country in which is located the school of graduation, under exceptional circumstances such licensure would not be demanded if the candidate had fulfilled all of the educational requirements for licensure.

4. Evidence of satisfactory completion of the above-described courses of study.

5. As evidence of acceptable moral and ethical behavior, each candidate must present a properly executed affidavit that he has not been convicted of any crime involving moral turpitude and that he has never been censured or had other punitive action taken against him by any recognized medical body including licensing agencies for reasons of immoral conduct.

Examination for Factual Knowledge in Medicine

The objectives that this program is designed to fulfill dictated certain factors that had to be considered in determining the nature of the examination.

1. An acceptable examination must be a valid test of the foreign physician's knowledge in medicine. The examination must also give sufficient insight into the applicant's ability to approach rationally a clinical problem and follow it through to a logical conclusion as the result of application of basic medical concepts rather than empiric knowledge.

2. Since applicants to this evaluation service are to be measured in comparison to the performance of graduates of American medical schools, the examination must lend itself to such a comparison.

3. If this program is widely accepted, as the committee is confident it will be, foreign-trained physicians seeking further training in the United States will not be able to find positions offering such experience until they have successfully completed all phases of the program. Those physicians seeking further training in the United States cannot obtain a student visa until they have already received a position offering this additional training. It, therefore, is necessary that the examination be conducted abroad as well as in the United States. Under these circumstances it is then also most advisable that the administration of the examination require minimal supervision.

4. The costs of preparation and administration of the examination must not be prohibitive.

On the basis of advice from consultants experienced in educational testing, the co-operating committee concluded that an objective-type examination of approximately 400 properly selected test items would provide for purposes of this program a valid measure of medical knowledge. A significant number of these items should consist of case presentations with multiple questions based on them to determine the applicant's ability to interpret symptoms, signs and basic laboratory data in arriving at accurate diagnosis and rational therapy. Such an examination could be given in a single day, divided into a morning and afternoon session.

Utilization of the objective multiple-choice examination presents many advantages. Perhaps most important among these for the purpose of this program is that such an examination lends itself to rapid, accurate, impartial machine scoring and thorough statistical analysis, thus providing a sound basis for many comparative studies. Another important advantage of this type of testing is that the administration of it is not

complex and only minimal supervision is necessary so that it could be given abroad.

One of the important problems that has been encountered with graduates of foreign medical schools who have taken further training in hospitals in the United States has been their lack of satisfactory command of English. Inability to communicate well with colleagues, staff physicians, and patients can readily lead to disastrous accidents in patient care. Furthermore, it is highly unlikely that any effective learning can occur without easy intercommunication between student and teacher. Facility with English is to be one of the requirements for participation in this program and will be one of the factors measured.

Successful completion of all phases of this evaluation program would result in certification of this achievement to hospitals and other interested organizations with the approval of the foreign-trained physician concerned.

The proposed program of the co-operating committee in detail includes recommendations for administrative organization-type examination and procedures, with suggestions for financing after developing a smaller group to carry on the plan of operation.

Progress of the many deliberations and discussions of the co-operating committee had reached a nearly completed plan for the individual evaluation of the foreign graduate education after March 1956, meeting. It was advisable to reveal this stage of progress to the advisory committee of educational organizations which had assembled in Washington, D. C., two years previous. The following agencies responded and were present April 20, 1956:

Responding Agencies

Council on Medical Education and Hospitals
 Association of American Medical Colleges
 American Hospital Association
 Federation of State Medical Boards of the United States represented by Combs, Biering, Crabb, Ezell, Seckinger, Swanson and Schnoor
 American Medical Association — Board of Trustees and the Washington office
 National Board of Medical Examiners
 Educational Testing Service
 Selective Service System
 Sears Roebuck Foundation
 New York University College of Medicine

Columbia Presbyterian Medical Center
 Josiah Macy Jr., Foundation
 Kellogg Foundation
 National Committee for Resettlement of Foreign Physicians
 Institute of International Education
 American Council on Education
 University of Pennsylvania Graduate School of Medicine
 American Association of Collegiate Registrars and Admission Officers
 Department of State — International Educational Exchange Service
 Pan American Sanitary Bureau
 Public Health Service — Division of International Health
 China Medical Board
 Cornell University Medical Center
 Department of Health, Education, and Welfare of the United States
 Health Resources Advisory Committee
 Office of Defense Mobilization of the United States
 Department of Defense of the United States

These groups were appraised of the educational evaluation program of foreign medical graduates and the plan of organization for activation, procedure and conduct of the plan after incorporation. After discussion of the many problems and possibilities of the plan, the report was adopted.

The co-operating committee recommended that the formation of a smaller non-profit organization be incorporated to take over as the "Evaluation Service for Foreign Medical Graduates." The co-operating committee then would dissolve, but could be useful in an advisory manner if complicated problems arise.

The federation group met after the meeting and selected Schnoor and Crabb to the "Board of Trustees of Evaluation Service for Foreign Graduates." Selection from other member groups of the co-operating committee were Kinsman and Mitchell, Association of American Medical Colleges; Hardwicke and Hamilton, American Hospital Association; and Reuling and E. S. Hamilton, American Medical Association. At the organization meeting of the trustees, the following officers were elected: Dr. Murray Kinsman, president; Dr. Sara Hardwicke, treasurer; Dr. E. S. Hamilton, vice president; and Dr. Stiles Ezell, secretary.

Legal Aspects

Incorporation of the "Evaluation Service of Foreign Medical Graduates" procedure necessitated engaging legal talent whereupon the evaluation service group selected Kirkland, Fleming, Green, Martin and Ellis, of Chicago, represented by Karl Nygren.

Legal advice suggested changing the corporate name of "Evaluation Service for Foreign Medical Graduates" to "Educational Council for Foreign Medical Graduates" to avoid technical difficulties in interpretation by the United States Department of Revenue. The above name was then adopted and several changes in by-laws also were made on legal advice, and two public representatives are to be added to the council. One member from the United States Department of Health, Education and Welfare, and one member from the United States Department of Defense.

Legal questions involving tax exemption have delayed final contacts with foundations for funds to proceed with the plan. Latest information reveals the prospects are now extremely bright and we anticipate an early favorable resolution of this problem.

The co-operative attitude and the revelation of satisfaction in the proposed program of the Council on Education of the Foreign Medical Graduate is made known in a communication from the state department. I herewith quote two paragraphs from this extensive communication:

"All, but a very small proportion of foreign interns and residents, who have trained or are training in American hospitals have been selected and screened solely by the hospitals making the appointments. The foreign medical intern or resident who comes to an American hospital without training and education at least approximate to that of his American colleague will find that either his program is reduced to a pure "work" program, which will doubtless prove dishcartening and unprofitable, or he will find his appointment terminated after what may have been a long and expensive journey to this country, or he may find that he is serving to the actual detriment of the patients of the hospital in which he is serving. The cumulative effect of any sizable number of such cases on the exchange program and its objective need not be detailed."

"The foreign medical intern and resident program which has operated under exchange visitor regulations for the last seven years has made substantial contributions to the practice of medicine in a number of countries and to the understanding of American professional, cultural, and social progress in these countries. Its continuance, however, is jeopardized by the abuses we have noted. An agency as broadly based and professionally competent as the Educational Council for Foreign Medical Graduates in carrying out its proposed program will be making a contribution to interchange of knowledge and skills that could not possibly be equalled were the department to undertake the project with appropriated funds."

A survey of the present foreign medical graduate situation reveals that at this time there are some 6,023 foreign-trained physicians from 84 foreign countries in the United States on temporary post-graduate study basis; interns, 1,859; and residents, 4,174. In addition, some 1,000 foreign citizens on immigration visas are serving as house officers. Foreign medical graduates are especially located in a large number of eastern United States hospitals representing in some instances from 25 per cent to 50 per cent or more of the house staff group.

In 1955, some 1,777 foreign medical graduates were examined by various state examining boards, of whom 41 per cent failed.

During the past 10-year period, 1946-1955, seven states after examination have licensed the following number of foreign graduates: California, 602; Illinois, 968; Maryland, 233; New York, 1,600; Ohio, 406; Rhode Island, 138; Virginia, 116.

After all legal difficulties are solved and evidences of reasonable financial support are concluded, the educational council can then proceed to properly organize its official staff and prepare for its examination "premiere" in this country soon.

The results of two years of extensive discussions and studies of the co-operating committee have now resulted in developing a definitive plan for the *individual evaluation of the educational competence of the foreign medical graduate* as first suggested in a primitive resolution presented by the federation to the original groups before the organization of the co-operating committee. This plan, as adopted by all interested

organizations, when in effect, will thus eliminate the present 50 foreign medical school list as compiled by the Council on Medical Education and Hospitals and published in the Journal of the American Medical Association annually.

The federation group wishes to express its sincere gratitude for the untiring efforts and co-operative spirit of all groups in the co-operating committee and particularly special yeoman service by Co-operating Committee Chairman Donald Anderson and Council on Education and Hospitals Secretary Edward Turner and Assistant Secretary Walter Wiggins in the development of this program to provide a method expected to maintain the high educational standards in which all American medical groups are interested.

ADDENDA: *Interim Progress Since February Meeting of Federation:*

Feb. 14, 1957 the federal government tax department informed the Council on Education for Foreign Graduates of a "tentative" tax exemption status till the program has had actual operation for a year. After the first year's report,

further consideration for tax exemption will be given.

Previously stated, two charitable foundations were considering aiding the Council on Education of Foreign Graduates on verification of tax exemption. This will now be in progress as the director and staff become active.

As reported to the February meeting, Dr. Stiles Ezell was approached to accept the directorship. Dr. Ezell had three conferences with the council members and after prolonged and deep consideration finally on July 7 announced his inability to accept.

On July 8 the executive committee offered the directorship to Dr. Dean F. Smiley, a former member of the co-operating committee representing the Association of American Medical Colleges. Dr. Smiley accepted on part time basis from July 15 to Oct. 1 when he relinquished his secretaryship of the Association of American Medical Colleges to give full time to the Council on Education of Foreign Graduates. Announcement of official offices in Evanston and further particulars of interest to the federation will be forthcoming as organization progresses.

POISON CONTROL

BASED on the latest authoritative information from the committee on toxicology of the American Medical Association, the Poison Control Information Center at the University of Arizona College of Pharmacy recommends the following measures to be taken in case of poisoning.

The aim of first-aid measures is to help prevent absorption of the poison. *Speed* is essential. First-aid measures must be started at once. If possible, one person should begin treatment while another calls a physician. When this is not possible, the nature of the poison will determine whether to call a physician first, or begin first-aid measures and then notify a physician. Save the poison container and material itself, if any remains. If the poison is not known, save a sample of the vomitus.

Measures to be Taken Before Arrival of Physician

I. Swallowed poisons

Many products used in and around the home, although not labeled "Poison," may be dangerous if taken internally. For example, some medications which are beneficial when used correctly may endanger life if used improperly or in excessive amounts.

In all cases, except those indicated below, *remove poison from patient's stomach immediately* by inducing vomiting. This can not be overemphasized, for it is the essence of the treatment and is often a lifesaving procedure. Prevent chilling by wrapping patient in blankets if necessary. Do not give alcohol in any form.

A. Do not induce vomiting if:

1. Patient is in coma or unconscious.
2. Patient is in convulsions.
3. Patient has swallowed petroleum products (i.e. kerosene, gasoline, lighter fluid).
4. Patient has swallowed a corrosive poison (symptoms: severe pain, burning sensation in mouth and throat, vomiting).

CALL PHYSICIAN IMMEDIATELY

- (a) Acid and acid-like corrosives: sodium acid sulfate (toilet bowl cleaners), acetic acid (glacial), sulfuric acid, nitric acid, oxalic acid, hydrofluoric acid (rust removers), iodine, silver nitrate (styptic pencil).
- (b) Alkali corrosives: sodium hydroxide-lye (drain cleaners), sodium carbonate (washing soda), ammonia water, sodium hypochlorite (household bleach).

If the patient can swallow after ingesting a corrosive poison, the following substances (and

amounts) may be given:

For acids: milk, water, or milk of magnesia (1 tablespoon to 1 cup of water).

For alkalis: milk, water, any fruit juice, or vinegar

For patient 1 to 5 years old — 1 to 2 cups for patient 5 years and older — up to 1 qt.

B. Induce vomiting when non-corrosive substances have been swallowed:

1. Give milk or water (for patient 1 to 5 years old — 1 to 2 cups for patient over 5 years — up to 1 quart).
2. Induce vomiting by placing the blunt end of a spoon or your finger at the back of the patient's throat, or by use of this emetic: 2 tablespoons of salt in a glass of warm water.

When retching and vomiting begin, place patient face down with head lower than hips. This prevents vomitus from entering the lungs and causing further damage.

II. Inhaled poisons

1. Carry patient (do not let him walk) to fresh air immediately.
2. Open all doors and windows.
3. Loosen all tight clothing.
4. Apply artificial respiration if breathing has stopped or is irregular.
5. Prevent chilling (wrap patient in blankets).
6. Keep patient as quiet as possible.
7. If patient is convulsing, keep him in bed in a semidark room; avoid jarring or noise.
8. Do not give alcohol in any form.

III. Skin contamination

1. Drench skin with water (shower, hose, faucet).
2. Apply stream of water on skin while removing clothing.
3. Cleanse skin thoroughly with water; rapidity in washing is most important in reducing extent of injury.

IV. Eye contamination

1. Hold eyelids open, wash eyes with gentle stream of running water immediately. Delay of few seconds greatly increases extent of injury.
2. Continue washing until physician arrives.
3. Do not use chemicals; they may increase extent of injury.

V. Injected poisons (scorpion and snake bites):

1. Make patient lie down as soon as possible.
2. Do not give alcohol in any form.
3. Apply tourniquet above injection site (e.g., between arm or leg and heart). The pulse

in vessels below the tourniquet should not disappear, nor should the tourniquet produce a throbbing sensation. Tourniquet should be loosened for 1 minute every 15 minutes.

4. Apply ice-pack to the site of the bite.

5. Carry patient to physician or hospital; **DO NOT LET HIM WALK.**

VI. Chemical burns

1. Wash with large quantities of running water (except those caused by phosphorus).
2. Immediately cover with loosely applied clean cloth.
3. Avoid use of ointments, greases, powders, and other drugs in first-aid treatment of burns.
4. Treat shock by keeping patient flat, keeping him warm, and reassuring him until arrival of physician.

MEASURES TO PREVENT POISONING ACCIDENTS

A. Keep all drugs, poisonous substances, and household chemicals out of the reach of children.

B. Do not store nonedible products on shelves used for storing food.

C. Keep all poisonous substances in their original containers; do not transfer to unlabeled containers.

D. When medicines are discarded, destroy them. Do not throw them where they might be reached by children or pets.

E. When giving flavored and/or brightly colored medicine to children, always refer to it as medicine — never as candy.

F. Do not take or give medicine in the dark.

G. **READ LABELS** before using chemical products.

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**Nov. 1, 1957, Progress Report from the
Poison Control Information Center at
the University of Arizona College of
Pharmacy**

STATISTICS of 25 poison cases reported since the Oct. 1, 1957 progress report:

- Age:*
- 84 per cent involved under-5 year age group
 - 12 per cent involved 16 to 30 year age group
 - 4 per cent involved over 45 year age group

- Nature of Incident:*
- 92 per cent accidental
 - 8 per cent intentional

- Outcome:*
- 96 per cent recovery
 - 4 per cent fatal

- Time of Day:*
- 32 per cent occurred between 6 a.m. and noon
 - 44 per cent occurred between noon and 6 p.m.
 - 24 per cent occurred between 6 p.m. and midnight
 - none occurred between midnight and 6 a.m.

- Causative Agent:*
- 32 per cent aspirin preparations
 - 12 per cent household antiseptics
 - 8 per each for household bleaches, insecticides, and sleeping caupsules.
 - 4 per cent each for crayons, hair dye, household detergents, match tips, moth balls, antihistamines, flu tablets, and a combination of rubbing alcohol and a household antiseptic.

**AMA OPPOSES ELIMINATION OF
MILITARY VETERINARY CORPS**

IN a letter to Defense Secretary Neil A. McElroy, the American Medical Association has asked for reconsideration of a directive that would in effect abolish the military veterinary corps. The question first rose in 1956 when the then defense secretary, Charles E. Wilson, indicated his intention to eliminate the corps in the continental United States and turn over meat inspection duties to he deparment of agriculture. After receiving a number of protests, Mr. Wilson held up action on the directive. On Oct. 1 of this year, shortly before his retirement, Mr. Wilson issued the directive that would mean the end of the veterinary corps. In asking Mr. McElroy to

reconsider the Wilson order, the AMA pointed out that the house of delegates in June 1956, voted to oppose abolition of the corps. The letter to Mr. McElroy, signed by Dr. Ernest B. Howard, assistant AMA secretary, said in part:

"The requirement for trained veterinarians to inspect animals and animal food products is necessary for the maintenance of the health needs of military personnel at all times. The trained veterinarian capable of accomplishing such a mission must be responsive to the military command. Experience has shown that when adequately trained veterinarians are not available to the military, this duty is by command decision placed upon military physicians. Accordingly, such action reduces the services of military physicians available for military medical requirements in care of patients. For these and other reasons . . . the American Medical Association requests that you carefully reconsider the Oct. 1 directive in light of your responsibilities for the health of the personnel of the armed forces under their world-wide mission and world-wide bases."

Copies of the letter were sent to Chairman Carl Vinson of the house armed services committee and to Richard B. Russell of the senate armed services committee.

**ACTIVE TB DECLINES 30 PER CENT
IN FIVE YEARS, BUT STILL 250,000
CASES**

ALTHOUGH active tuberculosis has declined 30 per cent in the last five years, the general control picture is not entirely reassuring. This is the report of Public Health Service and the National Tuberculosis Association on results of the only nationwide survey in five years. The check shows that despite intensive efforts for control, almost 40 per cent of the active cases are unknown to health authorities, and these people are not receiving treatment. ("Unknown" cases are estimated on the basis of X-ray survey findings.) Other findings—In the five years there has been no decrease in number of persons who are or have been ill with the disease, and there are still about 250,000 persons known to have tuberculosis in its active form. The most encouraging phase of the report is that active cases have dropped from 350,000 to 250,000 and inactive cases requiring supervision of health departments from 600,000 to 550,000.

RX., DX., AND DRS.

By Guillermo Osler, M.D.

CIVIL DEFENSE has had a shot in the arm from the guided missile progress. People have become scared enough to ask what to prepare for 'atomic bomb' attacks, — where to go, what to put in a stockpile, etc. . . . Physicians may get out their publications on *'The Practitioner in the Atomic Age,'* etc. We can't say much about it in a paragraph, but one can always start with the reminder that damage may result from mechanical injuries, thermal burns, and radiation injury. Each of these can be mild to severe; can affect various parts of the body; can occur together; and the last-named can be acute or delayed in its effect. *'Radiation sickness'* is a huge study which involves careful clinical follow-up, many lab tests, and the use of decontamination, bed rest, sedation, antibiotics, ACTH, fluids and transfusions, antihemorrhagics, antinauseants, and intensive vitamin therapy. It is quite probably that 'the end is not yet,' and that better methods of protection will be described.

Someone up there (in Ohio) loves us! The Ohio State Medical Journal for June 1957 had three references to pieces in ARIZONA MEDICINE. . . . One concerned an article by Dr. Lockie on barbiturates. The other references were separate, and by chance are also by Dr. Lockie.

Here we go again on an old hobby-horse of ours, — **desalted water.** This is probably the seventh article on that topic in this column in 10 years. The Guvmint (in the person of D. S. Jenkins, Department of the Interior) says industry is lagging in a search for methods, but I doubt it in general, and also because the old Maxim Silencer Co. of Hartford, Conn., says that it now has a method which costs only 20 cents per thousand gallons. . . . This compares with Colorado River water in Los Angeles at 6.8 cents, and Feather River water at 14 cents. The best previous desalting has ranged between 30 and 40 cents. . . . The process requires cheap fuel, since it consists of flash-boiling, plus re-use of heat, plus vacuum distillation. . . . We don't know what the definition of 'fresh water' is in Hartford, but it is probably a better one than the Dept. of Interior, — 1,000 P.P.M. of solids, most of which are salt. This isn't very good for irrigation. . . . Maybe we'll still have news for other paragraphs later.

Names of **TRADE PREPARATIONS** are sometimes interesting, sometimes odd, sometimes wierd (which means "out of this world"). . . . We have just received some samples of a "pure vegetable bulk LAXATIVE" with a name 'Saraka' one tries at once (without success) to pronounce backwards. . . . The strangest angle is the names of the ma-

terials which it contains, — Bassorin and Frangula. They are right out of an 1820 book on English herbs and simples, or out of a gag-writer's book on double-talk.

When your **low-cholesterol diet** has been imperfect over a weekend, or if you want to protect your arteries from a genetic flaw dating back to 1700, you now have possible protection. . . . The Armour Laboratories, for instance, have 'Arcofac' on the market. It is listed as "a concentrate nutritional supplement," and it contains a high concentrate of linoleic acid (which "lowers high blood cholesterol"); vitamin B6, or pyridoxine (which is necessary for conversion of linoleic acid to the primary essential fatty acid, arachidonic acid); and vitamin E, a tocopherol (which is an antioxidant, and which protects linoleic acid from loss of potency). . . . There is the process, which may not be as simple as it sounds.

We have read of the successful **OPERATIONS ON THE AORTA** and other great vessels. Dr. de Baakey of Baylor, and his colleagues in that field, have had a kindly coverage in the Saturday Evening Post on their replacement of aneurysmal and stenotic arteries (Dr. Cooley has reported that their mortality for 120 cases was 6 per cent.) . . . Dr. Robert Gross of Boston, premier cardiac surgeon, told the third annual meeting of the American College of Angiology that **COARCTATION** of the aorta should almost always be operated on. The average age of death is 30 years of age, so it has to be caught early. The cause of death is distributed between aortic rupture, bacterial infection, congestive heart failure (which we'd have thought most common), and intracranial hemorrhage.

Everyone has a suggestion for our scientific colleagues who have to send up a **satellite** soon. Often it is a complaint, or a joke (like the report that the American vehicle would contain 3 cows. Wonderful propaganda. "The herd shot 'round the world.") . . . The medical researchers, who have had to stand off the antivivisectionists for years, know how the space boys feel as they have to decide in sending up materials, mice, or men. The experiments are so very public. . . . The Russians must be dumb if they thought opinion wouldn't be aroused in favor of a dog; it served only to call up the dormant memories of the Communists" callous and deathly feeling towards human life.

Perhaps you have seen a recent issue of the Pfizer 'Spectrum' (once published in toto in the



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We wish to express our appreciation to the many doctors who assisted us with their suggestions resulting in this new coverage.

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HOSPITAL BENEFIT ASSURANCE

Duke R. Gaskins, M.D.
Medical Director

DRG:mjf

J.A.M.A.). The editors asked Dr. S. S. Lichtman of Cornell and Dr. W. Paul Havens of Jeff. the **AMOUNT OF BEDREST NEEDED IN HEPATITIS**. . . . Dr. Lichtman feels very strongly that strict bed-rest is indicated for any symptomatic case, for those with lab. evidence of liver damage, and for those with liver and spleen enlargement. It should continue for 3 months, or longer if the signs persist. . . . Havens is more tolerant, and allows patients up when they feel like it. . . . Each quotes work in the past which seems to substantiate their attitude. I guess we'll have to wait and see, and possibly be cautious, or at least compromise, meanwhile. . . .

There are certain non-medical public media where the physician may appear with his writings in a legitimate, nay even laudable and desirable way. A Tucsonan has made it, and very well too. Dr. W. P. Holbrook wrote one of the medical articles in 'This Week' Magazine (in many Sunday papers). His topic was, naturally, 'Rheumatoid Arthritis' and he did a perfect and brief job of it.

Another Sanatorium Association meeting has just ended in California. The variation in the use of current **METHODS FOR TREATMENT OF TUBERCULOSIS** still seems to be considerable. Everyone uses drugs. Everyone still uses rest. Most people allow home care at times. Everyone believes in surgery. Unanimity, however, is completely lacking (and everyone gets good results!) . . . San or hospital care is best for many patients until they have gotten a sure result. Home care is useful when the cooperative, 'negative' patient can be conveniently cared for. . . . Complete rest is needed by acutely ill, febrile, symptomatic patients. They may be cautiously ambulant when their x-rays and symptoms allow it. . . . Two drugs (PAS and INH) are enough for some non-acute patients (and some non-drastic physicians). Three drugs (SM, PAS, and INH) are used for acute lesions, extra-pulmonary lesions, and by a few thoughtful M.D.s. The use of daily doses of streptomycin must be justified by those who wish to take the hazards. . . . Resection is approved when there is a destructive lesion still present after 4 to 8 months of chemotherapy, possibly by planigram, and in spite of negative bacterial findings. A closed negative lesion causes a split decision; more people now prefer to wait, especially if the residue is small (1 cm lesions). . . . The proponents of 600 to 1,200 mg of INH (Isoniazid), and the use of 4 drugs for 100 per cent conversion of sputum are possibly increasing.

Have you ever saved a person's life by resuscitation? The doctor's dream used to be about the child who was choking because of an obstruction in the larynx. Out came a trusty pen-knife. Zip goes a tracheal incision. Wheee goes the renewed breathing. . . . The tracheotomy could still happen,

but there is a lot more chance that the breathing may be stopped for some other reason than a marble or foreign object. The treatment is lots less bloody than a tracheotomy. **Mouth-to-Mouth resuscitation** is simple, effective and can be used very often. First, clear the pharynx. Second, pull the jaw upward with one hand. Next, put the other hand on the epigastrium and exert a constant pressure. Finally, breath an ordinary breath into the mouth, disengage, blow an alternate breath into the air, then one in the mouth, etc. . . . In older children and adults the nose may have to be pinched-off during the blow-in. . . . It's a great sensation to work it successfully.

The New York Academy of Sciences sponsored a '**CONFERENCE ON MEPROBROMATE AND OTHER AGENTS**,' much to the joy of several pharmaceutical companies. There were quite a few special uses of the drugs, such as flight neuroses, anxiety, depression, alcoholic withdrawal, and muscle spasm, but the best item we saw in the report (by Wyeth, the Equanil maker) was a pharmacological classification of tranquilizing drugs. The '**antonomic suppressants**' include reserpine and chlorpromazine. The '**central relaxants**' include meprobromate and mephanesin. . . . The suppressants may produce a feeling of detachment and indifference. The central relaxants remove hostility, but normal humans (under no tension) have no mental or somatic changes.

Dr. Paul Hawley, Director of the American College of Surgeons and a former VA medical personality, can be called fairly outspoken, and at all times. He has recently discussed "**Medical Writing**," in the Medical Annals of the District of Columbia, and says: "With few exceptions, the worst writing I have ever encountered has been in medical publications." . . . (He started his own criticism with a prepositional phrase, used an extra comma, and exaggerated for emphasis; probably reads too much medical writing.) . . . He continues as follows, — "I do not know why this should be true except that medicine is almost the only profession, other than literature, in which the reputation of the individual is largely determined by his publications; Medicine differs from literature in that medical reputation is based upon quantity of writing whereas literary reputation depends upon quality."

A recent **MEDICAL CARTOON** in the **NEW YORKER** is only a slight exaggeration of the 1957-67 '**Law of Possibilities**.' A couple of 'high steel' workers were seen to be putting beams together on top of a new skyscraper. One of them had just lighted a cigarette. The other had apparently just criticized him. In reply the smoker says, — "I figure what's it all matter? If cigarettes don't get you, radiation will!"

New Custodian Laws May Save You Taxes

During the past months state after state has adopted the new Uniform Gifts to Minors Acts which make it simple to give securities to a minor. Now 39 states have a custodian law with the likelihood of several more passing such laws within a few months.

The following states now allow gifts of cash as well as securities: Arizona — Arkansas — Delaware — Florida (Oct. 1st) — Georgia — Idaho — Indiana — Kansas — Maryland — Minnesota — Missouri — Montana — Nebraska (Sept. 20th) — Nevada — New Hampshire — New Mexico — North Dakota — Oklahoma — Pennsylvania — South Dakota — Tennessee — Texas — Utah — Vermont — West Virginia — Wyoming.

HOW THE LAW WORKS

- 1. Gifts to persons under 21 or stocks, bonds, mutual fund shares or other securities can be made in the name of a custodian.
- 2. Generally, the custodian may be any adult member of the family — a parent, brother, sister, aunt or uncle — even a child's guardian.
- 3. The custodian may buy and sell securities, collect dividends, and use them or reinvest and accumulate them for the child's benefit. The only restriction is that the custodian is required to act with prudence in seeking reasonable income and preservation of capital.
- 4. Registration of securities is easy. Here is how your investment dealer would register them for you:

"(name of custodian), as a custodian for (name of minor) a minor . . ."
This will be followed by a specified phrase which each state has prescribed for its Custodian law, such as:
". . . under the New York Uniform Gifts to Minors Act."

TAX ADVANTAGES

The new Custodian Law may enable you to shift income from high to low Federal tax brackets, because the income from investments or other property which you give to a minor child will be taxable to the child, if at all. **AT TAX RATES MUCH LOWER THAN YOUR OWN.**

Income from property given to a minor — either under custodianship laws or under an irrevocable trust — **WHICH IS USED FOR THE SUPPORT OF THE MINOR** will be taxable to the parent no matter who makes the gift.

There are two estate tax advantages from giving while you live. If your gift is taxed at all, it will be at the lower Federal gift tax rates instead of being subjected later to the higher estate tax rates.

Your gift also comes off the **TOP** of the estate tax scale and moves to the **BOTTOM** of the gift tax scale.

You may not have to pay any gift taxes because you may give away \$30,000 tax free during your lifetime. You may give \$3,000 annually to as many persons as you wish without incurring any gift tax and without using up any of your lifetime exemption. Until you give any one person \$3,000 a year it does not even have to be reported to the Government. With your wife, these figures double.

Would you like to learn how you can share in the earnings of carefully selected "Blue Chip" stocks of major American companies — and also take advantage of the new Custodian Law?

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Organization Page

CIVICS

Norman A. Ross, M.D.

THE October 1957 issue of Arizona Medicine is a number that we have had bound and are adding to our permanent library. Book marks are placed at pages 591, 605, 618, and 632. The articles beginning on these pages typify the reactions of organized medicine, the individual physician, the free enterpriser, physician, and volunteer programers, to the fixing of fees, fee schedules.

In "How Fixed Fee Schedules Result in Government-Controlled Medicine," page 605, by James L. Doenges, M.D., we find such statements as:

Statement No. 1 — "Government medicine is no more inevitable as the result of the acceptance of fixed fee schedules than is total socialism an inevitable result of the acceptance by the people of a nation of the nationalization of one segment of the economy. * * * but history provides no important example of the exception."

Statement No. 2 — "As soon as a third party enters the picture, regardless of the area, the destruction of the free practice of medicine is under way."

Statement No. 3 — "Too many physicians have accepted third party interference with their practices. Control is control, and it matters not who exercises this control. The fact of control remains unchanged."

Statement No. 4 — "Many physicians believe that anything they accept without some agency issuing a regulation or without a law, constitutes a 'voluntary' act."

Statement No. 5 — "If a group of physicians constitutes the third party, the element of control is not eliminated."

We would suggest that you re-read the articles on these several pages, considering the above.

In this same vein, Scope Weekly, Oct. 9, 1957 in News from the Capital:

AMA TO OPPOSE LEGISLATIVE LINK OF HOSPITAL PLANS, SOCIAL SECURITY

By World Wide Medical News Service,
Washington Bureau

Washington — The American Medical Association

will oppose any legislation designed to connect prepaid hospitalization plans to the social security program, according to a spokesman for the AMA.

* * * "We believe that by linking any hospitalization plan with the social security program, the government would be taking an irrevocable step toward a pattern of socialized medicine," the AMA spokesman said. "Both the hospitalization insurance and social security programs are working out quite well independently of each other. Putting them together would simply be the first step toward a broader and more insidious program of government domination."

ARIZONA'S GROWTH PROJECTED

Arizona Business Bulletin, October 1957, projects the manpower requirements in the Phoenix area. In that this growth is no more than that of other populous areas of the state, we are offering these, their figures, for statewide consideration.

Where did the labor market area stand in 1956 compared with 1950? Total population — up 52 per cent. Total employment — up 43 per cent. Total nonagricultural wage and salaried employment — up 66 per cent. Manufacturing employment — up 150 per cent.

How will industries grow from 1956 to 1961? Total population — up 39 per cent. Total employment — up 58 per cent. Total nonagricultural wage and salaried employment — up 62 per cent. Manufacturing — up 135 per cent. Finance, insurance and real estate — up 82 per cent. Construction — up 68 per cent. Government — up 32 per cent.

How will occupational needs grow by 1961? Semiprofessional workers' needs — up 100 per cent. Professional workers' needs up — 55 per cent. Engineers and draftsmen needs — up 100 per cent. Skilled workers' needs — up 78 per cent. Electrical repairmen and electronic technicians' needs — up 200 per cent.

How do the present labor supply and the planned output of training and educational faci-

ilities meet this challenge? Thirteen per cent now employed will have retired from employment. Our present labor force will supply 53 per cent. Present training plans will furnish 19 per cent. On-the-job training will provide 13 per cent. Forty-four per cent of the increase in employment must needs be met by increasing training activity in our state or by costly recruiting.

FIVE HEALTH-MEDICAL BILLS ENACTED AS ADJOURNMENT NEARS

AMA Washington Letter 85-34, Aug. 23, 1957

Authorization for U. S. grants to help in construction of hospitals to be used by both Indians and non-Indians; extent of U. S. grant will depend on estimated proportion of beds to be used by Indians; U. S. also to pay for care of Indians. (This is Public Law 85-151).

To those of us looking to a combined county and Indian service as a possible medical school teaching facility, as in New Mexico, this law is encouraging.

SMALL BUSINESS LOANS TO HEALTH FACILITIES NEAR \$3 MILLION MARK

AMA Washington Letter 85-28, July 12, 1957
Small Business Administration, reporting on

its loan activities in the health field, has estimated that it has made 34 loans totalling \$2,976,550 for construction, expansion or equipping health facilities. Loans were made to proprietary hospitals, nursing homes, medical and dental laboratories and one combined medical-surgical-dental clinic. Money is loaned either directly to the borrower or in participation with a bank. The total covers the period between last October and July 1 to this year.

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INCREASING FLU INCIDENCE EXPECTED UNTIL EARLY JANUARY

SURGEON General Burney's advisory committee on influenza believes there will be increasing incidence of Asian influenza until early January, when the total of cases will level off, then start to decline. In announcing the committee's forecast, Dr. Burney made these additional points:

1. Doubling of the potency of the vaccine (see special report 85-6) was made possible because the virus now is growing "almost profusely" for manufacturers.

2. Substantial protection is obtained from current vaccine (200 units), and people who already have been vaccinated should not be

vaccinated again at this time with the new vaccine (400 units), in view of vaccine shortages. The new vaccine is expected to be between 10 and 15 per cent more effective than the old.

3. While increasing the potency will slow production about one-third, processing has been stepped up to such a degree that over 80 million doses were available by the end of November, an amount far in excess of original goals.

4. One flaw in the vaccination campaign is failure to vaccinate more patients whose conditions make them high medical risks.

5. A number of controlled tests suggest that "constitutional symptom" reactions to the vaccine appear only about in 4 per cent of those vaccinated.

PHS COMMITTEE OPPOSES MASS VACCINATIONS WITH BCG

AFTER studying the advantages and disadvantages of BCG vaccine to control tuberculosis, a special Public Health Service committee recommends against mass vaccination campaigns, proposing instead that vaccinations be limited to special situations where exposure to the disease is unusually high and where other means of control are inadequate. The committee concluded that vaccinations should be limited to:

1. Physicians and other medical personnel working in hospitals with inadequate tuberculosis control programs.

2. Families with whom a member infected with tuberculosis must reside.

3. Those associated with institutions in which exposure is known to be high, such as certain mental hospitals and prisons.

The committee gave weight to arguments that because persons vaccinated with BCG have a permanent positive reaction to testing, testing

and case-finding surveys are made difficult. It also pointed out that vaccination campaigns would occupy the time of persons trained in TB control work, who, in the committee's opinion, could be more profitably employed in other directions.

In releasing the report, PHS comments:

"BCG has been used in tuberculosis immunization for more than 30 years, and has had broad acceptance in certain European nations. There has been and still is wide variance of opinion as to its precise value, even in some of the countries that have been using BCG vaccine for many years. . . . The committee points out that studies have shown the effectiveness of BCG ranges from 0 to 80 per cent. Because of this wide range, the committee recommends against large-scale vaccination programs in this country."

Other recommendations and findings, some in conflict with those of the PHS committee, have appeared in the AMA Journal in the past few months: No. 9, pages 951 and 974; No. 13, page 1501; No. 10, page 1146, all Vol. 164.

CIVIL SERVICE COMMISSION PUSHES FOR HEALTH INSURANCE PLAN

IN an effort to disseminate information fully and gain widespread support among U. S. workers before next session of congress, the civil service commission is issuing a series of fact sheets explaining the commission-sponsored pro-

gram of health insurance for federal civilian employees. The particular plan was the basis of a bill introduced last session but not acted upon. Other ideas were proposed in prior sessions, but there has been no action on any of them. Under the program now sponsored by CSC, the participating employee would have to take both basic and catastrophic insurance, with the U. S. paying a third of the cost. Basic

insurance could be that provided by employees' unions or associations, fraternal groups or Blue Cross-Blue Shield, but it would have to meet some standards set by CSC.

The latest CSC fact sheet on insurance includes eight questions and answers, and three

statistical tables, showing (a) variation of premium costs offered by federal employee unions and associations, city-by-city variation in Blue Cross-Blue Shield costs, and (c) costs under New York's HIP and the Group Health Association of Washington, D. C.

ALCOHOL AND CA

HEAVY consumption of alcohol when combined with heavy smoking is found to be an important factor in the development of cancers of the larynx and the oral cavity, said Dr. Ernest L. Wynder of the Sloan-Kettering Institute for Cancer Research, New York.

Speaking at the annual meeting of the American Cancer Society at the Park Sheraton Hotel, Dr. Wynder stated that for the heavy smoker who consistently drinks seven or more "shots" of hard liquor per day the risk of developing cancer of the larynx or oral cavity (tongue, gums, buccal mucosa, palate, tonsils, and pharynx) is more than 10 times as great as for the moderate and non-drinker who smokes the same amount.

The type of alcohol consumed is also significant, said Dr. Wynder. A positive association has been established only for hard liquor not wine or beer. The study, to date, does not contain enough wine or beer drinkers to allow conclusive analysis for this type of drinking.

Role of Alcohol Unknown

It cannot be determined at this time whether alcohol alone can initiate these cancers since it has not been possible to find a sufficient number of heavy drinkers who are non-smokers. Thus, it is difficult to decide whether heavy alcohol intake is an initiator or merely a promoter of laryngeal and oral cancer.

"One can only theorize," said Dr. Wynder, "as to why excessive alcohol consumption increases the risk of developing cancers of these sites. The alcohol either could act directly upon the tissues, making them more permeable to tobacco smoke, or systemically by producing a nutritional deficiency which might induce tissue changes that

would make them more susceptible to carcinogens. Edentia was found to be higher among larynx cancer patients than the controls; this condition may also be a reflection of the dietary deficiency.

Of particular interest, noted Dr. Wynder, is the fact that the relative risk of a cigar and pipe smoker developing cancer of the oral cavity and larynx appears greater than for the cigaret smoker, which is in contrast to the pattern seen in lung cancer, in which the risk of developing the disease is more closely associated to the amount of cigarets consumed. Alcohol consumption is not a significant factor in the development of lung cancer. Also, Dr. Wynder noted that the further up in the respiratory tract the site of the cancer, the greater the percentage of pipe and cigar smokers.

Factors Ruled Out

Several factors once believed to be associated with the development of these cancers were apparently ruled out by Dr. Wynder's studies. Hot food seems to have no significance; voice strain could not be demonstrated to be a possible cause of larynx cancer; occupational exposures did not appear to be a factor. It is of interest also that dental irritation or general trauma seem to play no particular role in the development of cancers of the oral cavity.

The studies reported by Dr. Wynder are based on 209 male patients with cancer of the larynx; 209 matched controls; and 132 male patients with lung cancer also serving as controls; 543 male patients with cancer of the oral cavity, and 207 male control patients (patients with benign lesions of head and neck or chest and patients with cancer of the lower gastrointestinal regions or lymphomas).

GASTRO-INTESTINAL OBSTRUCTION
by Meyer O. Cantor, M.D., and Roland P. Reynolds, M.D., 565 pages. Illustrated. (1957) William & Wilkins. \$18.

Two surgeons from Grace Hospital, Detroit, co-ordinate the roles of such branches of medicine as radiology, internal medicine, and surgery, in the treatment of advanced cases of intestinal

obstruction. All phases of management and treatment are considered, including nursing. The book's comprehensive, well-illustrated, and a good source of reference.

Stacey's Medical Books, San Francisco.

VOLUNTARY HEALTH INSURANCE

VOLUNTARY health insurance against costs incurred through sickness and accident continues to spread its protective coverage over more and more Americans.

The Health Insurance Institute, taking a forward look to year-end growth figures, predicts that by Dec. 31, 1957, over 123 million people in the U. S. will be protected by some form of health insurance designed to help pay hospital, doctor or other medical care bills. This represents close to 75 per cent of the total U. S. civilian population.

Breaking down the national totals on health insurance coverage for 1957, an estimated 109 million persons will be covered for surgical ex-

penses, 74 million will have regular medical expense protection, 13 million will be insured against major medical expenses, and 43 million for loss of income coverage, in addition to the 123 million protected against the cost of hospital bills. Biggest growth in the type of coverage in recent years has been major medical expense insurance which helps to absorb the cost of serious, or catastrophic, illness.

Health insurance today covers more people than any other single type of insurance in force, the institute reports.

Total health insurance benefits paid out this year by insurance companies, Blue Cross-Blue Shield and miscellaneous plans, will amount to an estimated \$4.2 billion, as compared to \$3.6 billion in 1956. This accounts for a major contribution to the nation's over-all medical bill.

CANCER SOCIETY

PHOENIX will be the site of the American Cancer Society's annual regional meeting in 1958. This was voted by delegates at the 1957 annual business meeting Sept. 24 in Las Vegas.

Lay and professional delegates for Region Six which is composed of the states of Arizona, California, Colorado, Nebraska, Nevada, New Mexico and Utah, voted to invite the delegates

of Region Five to join them for a combined meeting of the two regions in September 1958 in Phoenix. Arizona delegates to the meeting were Dr. Edward H. Bregman and Dr. Mary Caldwell.

Also at the Las Vegas meeting, Horace B. Taylor, past regional chairman, nominated Dr. Edward H. Bregman of Phoenix to be Region Six chairman for the coming year. He was unanimously elected to the post by the delegates.

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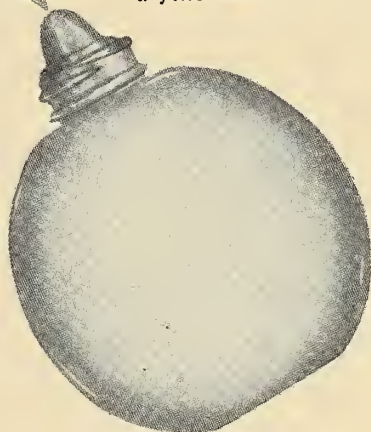
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AMERICAN CANCER SOCIETY SEMINAR

Jan. 23 through 25, 1958

Tucson Inn

Tucson, Ariz.

PANEL

Axel N. Arneson, M.D., Onconological Gynecologist, 457 North Kings Highway, St. Louis.

James Barrett Brown, M.D., Plastic Surgeon, 508 North Grand Avenue, St. Louis 3, Mo.

Vincent F. Collins, M.D., Therapeutic Radiologist, Baylor University, Houston, Texas.

Ross Golden, M.D., Diagnostic Radiologist, University of California.

Cornelius F. Lehmann, M.D., Dermatologist, 705 East Houston Street, San Antonio, Texas.

Ian G. MacDonald, M.D., Oncological Surgeon, 2009 Wilshire Boulevard, Los Angeles.

Arthur Purdy Stout, M.D., Pathologist, College of Physicians and Surgeons.

E. Dale Trout, Ph.D., Physicist, General Electric Company.

Thursday, Jan. 23 — 9:45 through 11:30 a.m.

SKIN TUMORS — Doctors Brown, Collins and Lehmann

1. Doctor Lehman: "The Dermatologist and Skin Cancer."

2. Doctor Collins: "Radiotherapy of Skin Lesions."

3. Doctor Brown: "Surgical Treatment of Skin Lesions" — 25 minutes.

12-2 — Luncheon with round table discussion. (cost included in registration fee)

Thursday, Jan. 23 — 2:30 through 4:00 p.m.

CANCER OF THE HEAD AND NECK — Doctors Brown, Collins, Golden, MacDonald and Stout.

1. Doctor Golden: "Roentgen Diagnosis of Diseases of the Sinuses and Larynx."

2. Doctor Stout: "Carcinoma in situ (Larynx)."

3. Doctor Brown: "Surgical Treatment of Cancer of the Head and Neck."

4. Doctor MacDonald: "Prophylactic Neck Dissection, Prophylactic Neck Irradiation. Surgery vs. Irradiation, Carcinoma of the Lip and Larynx."

5. Doctor Collins: "Radiotherapy in Cancer of the Head and Neck" — 15 minutes.

Friday, Jan. 24 — 9:30 to 11:00 a.m.

THE ABDOMINAL MASS — Doctors Golden, MacDonald and Stout.

1. Doctor Golden: "Diagnostic Procedures and Examples in Differential Diagnosis of Abdominal Masses."

2. Doctor Stout: "Pathology of Abdominal Masses."

3. Doctor MacDonald: "Surgery of Abdominal Masses, Including a Discussion of the Curability of Late Cancer."

4. Doctor Collins: "Radiotherapy of the Abdominal Mass."

12-2 — Luncheon with round table discussion.

Friday, Jan. 24 — 2:30 to 4:00 p.m.

PELVIC TUMORS — Doctors Arneson, Collins and Stout.

1. Doctor Arneson: "The Pros and Cons of Endometrial Carcinoma" (Surgery alone, irradiation alone, combined therapy) — 30 minutes.

2. Doctor Collins: "Cancer of the Ovary" — Therapy — ?Cobalt — 30 minutes.

Saturday, Jan. 25 — 9:30 through 10:15 a.m.

Mr. Trout: "The Application, Limitation and Dangers of Radiation Therapy."

10:30 a.m. through 12

END RESULTS AND COMPLICATIONS — Doctors Arneson, Brown, Collins, MacDonald and Stout.

1. Doctor Brown: "The Treatment of Lesions from Irradiation, Atomic Radiation and Cathode Ray Burns."

2. Doctor Arneson: "Carcinoma of the Cervix following Cervical Irradiation, End Results."

3. Doctor MacDonald: "End Results, 600 Cases of Carcinoma of the Breast" — 15 minutes.

4. Doctor Stout: "Results Following 2 M.E.V. Irradiation in Inoperable Lung Cancer."

5. Doctor Collins: "End Results and Complications Cancer of the Breast" — 15 minutes.

6. Dr. Lehman: "End Results — Skin Cancer."

Seminar to be held at the Tucson Inn, Jan. 23-25,

The American Academy of General Practice has approved the American Cancer Society seminar to be held at the Tucson Inn, Jan. 23-25, 1958, for a total of seven hours formal credit (Category I).

FUNDAMENTAL CANCER RESEARCH

THE 12th annual symposium on fundamental cancer research will be held March 6, 7 and 8, 1958 at the University of Texas M. D. Anderson Hospital and Tumor Institute, Houston, Texas.

The topic for the symposium will be "Radiation Biology and Cancer." The first day will be devoted to papers from the staff at M. D. Anderson Hospital which relate to the general symposium subject. The final two days of the program will consist of papers presented by recognized authorities in radiation research.

Chairmen for the radiation biology sessions include: Titus C. Evans, Radiation Research Laboratory, University of Iowa College of Medicine; Jacob Furth, Pathology Department, Children's Cancer Research Foundation, Inc., Boston, and Henry S. Kaplan, Radiology Department, Stanford University Medical School, San Francisco. General chairman of the symposium is Warren K. Sinclair, chief physicist at the University of Texas M. D. Anderson Hospital and Tumor Institute.

LOS ANGELES RADIOLOGICAL CONFERENCE

THE 10th annual mid-winter radiological conference, sponsored by the Los Angeles Radiological Society, will be held at the Biltmore Hotel, Los Angeles, California, on Saturday and Sunday, Feb. 22 and 23, 1958.

An outstanding program of pertinent interest has been arranged and the guest speakers will be: Dr. Ralston Paterson, Manchester, England, Professor William V. Mayneord, London, England; Dr. D. L. McRae, Montreal, Canada; Dr. E. B. D. Neuhauser, Boston, Mass.; Dr. Robert Stone, San Francisco; Dr. L. H. Garland, San Francisco; and Dr. G. W. Beadle, Pasadena.

The conference fee of \$20 includes two luncheon meetings featuring questions and answers. A banquet (\$7.50 per plate), preceded by cocktails, will be held Saturday evening. Reservations may be made through: Dr. John H. Eaton, 65 No. Madison Avenue, Pasadena, Calif.

Courtesy cards will be available to residents in radiology and radiologists in the armed forces by advance registration, with reduced tariff for

the luncheons and banquet. Hotel reservations should be made promptly through the convention manager, Biltmore Hotel, Los Angeles, Calif.

POSTGRADUATE COURSE — MEDICAL TECHNOLOGY

THE Ninth annual postgraduate course in medical technology will be offered at the University of Kansas Medical Center, Kansas City, Kans., on Jan. 6, 7 and 8, 1958. The 37 member guests and K.U. faculty includes the following nationally known instructors:

George E. Cartwright, M.D., Associate Professor of Medicine, University of Utah College of Medicine, Salt Lake City, Utah.

Bradley E. Copeland, M.D., Instructor in Pathology, Harvard Medical School; Senior Scientist, Cancer Research Institute, Boston, Mass.

Robert D. Wise, M.D., Ph.D., Associate Professor of Medicine and Director, Division of Infectious Diseases, Jefferson Medical College of Philadelphia, Pa.

Subjects of current interest in microbiology are presented Jan. 6; hematology is discussed on Jan. 7; and the Jan. 8 program covers clinical laboratory medicine and a chemistry symposium. Panel discussions provide an opportunity for question and answer sessions.

Special emphasis has been placed on the demonstration workshops. Each enrollee will have an opportunity to attend four of the following demonstrations:

- Blood banking procedures
- Serological techniques
- Enteric organisms
- Calibration of photometers
- Urinary sediment examination
- Tissue culture techniques
- Medical photography
- Paper electrophoresis
- Inflammatory activity tests
- Coagulation defects
- Helminths: laboratory diagnosis
- Blood slides
- Automatic chemical analyzer
- Viruses: laboratory diagnosis
- Special tissue stains

The course is open to all who serve in medical laboratories. Enrollment fee for the three days

is \$12. Program announcement may be obtained by writing to the Department of Postgraduate Medicine, University of Kansas School of Medicine, Kansas City 12, Kan.

FIFTH INTERNATIONAL CONGRESS ON DISEASES OF THE CHEST

THE Fifth International Congress on Diseases of the Chest, sponsored by the American College of Chest Physicians, will be held in Tokyo, Japan, Sept. 7-11, 1958. The congress will be presented under the patronage of the government of Japan and the Japan Science Council. The congress has been endorsed by the Japan Medical Association.

Scientific papers, panel discussions, fireside conference and motion pictures will be presented on the following subjects:

- Radiation hazards
- Coronary disease
- Occupational diseases of the chest
- Benign and malignant chest tumors
- Tuberculosis
- Cardiopulmonary function studies
- Asthma and emphysema
- Cardiovascular surgery
- Effect of jet air travel in chest disease
- Bronchoesophagology
- Tropical diseases of the chest
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The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL PRESENTATION OF CASE NO. 30

A 46-YEAR-OLD man entered the hospital because of muscular weakness and atrophy.

About eight years before admission, he had noticed the gradual development of weakness and muscular wasting in the hands, associated with rapid, irregular twitchings of the muscles of the shoulders, arms and hands that did not produce movement at the joints. As time passed, the affected muscles became progressively weaker, although he was able to continue his work as a commercial artist. He had also observed, since the onset of the weakness, that sudden or strong movements of the arm or shoulder muscles resulted in a strong, persistent contraction, which failed to relax immediately. At times these spasms were painful, although they usually were not. Occasionally, they occurred in the jaw muscles. Three years before admission, a neurologist found fairly good strength, with minimal wasting in the shoulders, arms and hands. The neck and sternocleidomastoid muscles were considered to be somewhat small, but strong. There was no abnormality of the cranial nerves or the legs. On gripping strongly, he was unable to relax his grasp, but his fingers went into a position of flexion at the metacarpophalangeal joints and extension at the interphalangeal joints for 30 seconds to one minute. Similar persistent contractions could be demonstrated in the deltoid and other arm muscles. The deep reflexes were exaggerated in the arms and at the knees; the abdominal reflexes were active and symmetrical; the plantar reflexes were normal. There were no sensory changes. Quinine, 0.3 gm. three times daily, was prescribed, after which there was great improvement in the muscular spasms. However, the weakness and twitchings became

steadily worse. About three months before admission, he had increasing shortness of breath on slight exertion and required two pillows at night. He had otherwise remained in good general health, although he reported a weight loss of about 40 pounds over the previous five years.

At the age of 19, during a world epidemic, he had had a two-month illness called "encephalitis" in which he had headache, was drowsy and yet slept poorly, and felt "nervous." He made a complete recovery from this. He had had no other noteworthy illnesses. The family history was unremarkable.

Physical examination showed a generally thin man, who was using the accessory muscles of respiration. The chest expanded poorly, and no movement of the diaphragm could be demonstrated by percussion. Breath sounds were diminished throughout both lungs. The heart was normal. The remainder of the general examination was not remarkable.

On neurologic examination, he was alert, oriented and co-operative. The eyes, including the pupils, and ocular movements were normal. There was no weakness or atrophy of the tongue, in which there were no definite fasciculations or fibrillation. The neck, shoulder, scapular and arm muscles were moderately weak, and there was severe weakness and wasting of the small muscles of the hands, especially on the right. The muscles of the legs and feet were fairly strong, although not normally so, with greatest weakness distally.

There were widespread, coarse fasciculations in the arms, hands and legs. There was difficulty in immediately relaxing a firm hand grasp and strong extension of the knee against resistance resulted in mild cramps in the quadriceps muscle. The deep reflexes and abdominal reflexes were present and equal; the plantar reflexes were normal. There were no sensory abnormalities.

The temperature was 99°F., the pulse 64 and the respirations 18. The blood pressure was 130 systolic, 70 diastolic.

Examination of the blood and urine were negative. Lumbar puncture gave clear cerebrospinal fluid under a pressure equivalent to 80 mm. of water; the fluid, which contained no cells, had a total protein of 19 mg. per 100 cc. and gave a

colloidal gold reaction of 0001110000 and a negative Wassermann reaction.

An electromyogram, performed with surface electrodes on the quadriceps, hamstring, anterior-tibial and gastrocnemius muscles bilaterally, disclosed spontaneous fasciculations, but normal activity with voluntary contractions. Similar bilateral recordings from the biceps, triceps and flexor and extensor muscles of the wrist revealed fasciculations, most marked in the right biceps and wrist extensor muscles. Voluntary contraction of the right arm showed a failure of relaxation of all muscles lasting 18 seconds. The patient was found dead in bed on the morning of the fourth hospital day.

DR. LESLIE B. SMITH

The diagnostic problem for today concerns a 46-year-old male, who for eight years before his death, suffered from progressive muscular weakness, atrophy, muscular fasciculation, and persistent contractions which failed to release immediately.

The order of progressive involvement of the muscles was; hands, shoulders, jaws, neck, legs, and the muscles of respiration. The muscles of the face, eyes, and the tongue were not affected. There were no sensory disturbances and quinine improved the muscular spasms.

Other than the weakness and the atrophy, the two main clinical findings were fasciculation and myotonia (failure of muscle to release after contraction).

During the course of my reading and in conversation with others, I have found that the terms fibrillation (fibrillar contractions) and fasciculation (fascicular muscular twitching) in the past were considered to be the same, hence are still erroneously used synonymously. However, particularly since electromyography, these two terms have distinct connotations.

Fibrillation is the spontaneous twitching of muscle fibers with a frequency of two to 30 per second. These contractions are so feeble that they never produce movements at the joints. Fibrillation is habitually present in denervated muscles, hence is called "fibrillation of denervation." It can be seen with the naked eye in the tongue, but in other parts of the body it can not be seen because of the skin. It has been called the "crying" of the muscle for proper nourishment needed for survival. It denotes acetylcholine sensitivity.

The electromyogram, in this case today, failed

to show any fibrillation of denervation, hence it should be safe to conclude, even though fasciculation was such a prominent feature, that he did not have a lower motor neuron disease such as occurs in:

1. Poliomyelitis
2. Progressive spinal muscular atrophy;
 - a. Bulbar type
 - b. Amyotrophic
 - c. Spinal type
 - d. Charcot-Marie-Tooth
3. Syringomyelia
4. Syphilitic amyotrophy
5. Intermedullary tumors
6. Traumatic lesions
7. Other diseases of the gray matter of the cord.

Bundle Involvement

Fasciculation is the small involuntary movements visible on the surface of the muscles, rhythmical or irregular, involving not the whole muscle, but only some of the bundles. They are almost always too feeble to produce movements at the joints. They may be seen in normal muscle when it is over-fatigued, or during exposure to cold. Fasciculation, although frequently seen in diseases of nerve degeneration, is an adjunctive and not a primary finding. It involves the peripheral portion of the lower motor neuron and may be functional. The wave form and duration is similar to that of the motor units. However, the amplitude is lower and the frequency is about one to three per second. It has been said that for practical purposes fasciculation does not occur in the myopathies or primary muscular dystrophies. However, it has been seen in some cases of myopathy.

An outstanding feature of this case was the delay of the muscles to relax after contraction (myotonia). Myotonia is the inability to relax a muscle normally after its contraction due to repetitive discharges beyond the myoneural junction. Although the mechanism is not thoroughly understood, some believe that it is the opposite of myasthenia gravis.

In the absence of fibrillation and the presence of myotonia, the problem then narrows down to deciding which one of the muscular dystrophies was present.

Progressive muscular dystrophy is the primary degenerative disease of the skeletal muscles. The innervation of the affected muscle is sound, in contrast to the neural and spinal atrophies. The

final proof of the existence of dystrophy is in the demonstration of intact muscle nerves and nerve endings in the presence of severe degenerative changes in the muscle fibers.

The characteristic features of symmetrical distribution of muscular atrophy, the retention of faradic excitability in proportion to the remaining power of contraction, the intact sensibility and preservation of cutaneous reflexes and the liability to heredofamilial incidence serve to set this group of diseases apart on clinical grounds. The case today has all of these qualifications except for known heredity.

The Adams, Denny-Brown, and Pearson clinical classification of muscular dystrophy is:

1. Severe generalized familial muscular dystrophy is a rapidly progressive type of myopathy beginning usually in early childhood, with a strong familial liability, and occurring predominantly in males with or without pseudohypertrophy; the most common type being Duchenne's pseudohypertrophic muscular dystrophy.

2. Mild restricted muscular dystrophy is a slowly progressive proximal myopathy, involving primarily the musculature of the shoulders and often the face, with long remissions and often complete arrest and weak familial incidence. The age onset is two to 60 years. The best known form is facio-scapulo-humeral dystrophy of Landouzy and Dejerine.

3. Progressive dystrophy ophthalmoplegia is a very slowly progressive myopathy involving primarily, and usually limited to the elevators of the eyelids and external ocular muscles.

4. Dystrophia Myotonica (Myotonic Dystrophy or Myotonia Atrophica) is a steadily progressive familial distal myopathy with associated weakness of the muscles of the face and elevators of the eyelids and a tendency to myotonic persistence of muscular contractions, testicular atrophy, and these cases may have cataracts and glandular disturbance.

Welander's Series

Welander has collected a large series of cases without familial cataracts with onset between 30 and 80 years of age. Testicular atrophy, although accepted as a part of dystrophia myotonica, is not always present, also, hypothyroid (Hoffman's syndrome), baldness, and feeble-mindedness may or may not be present.

Myotonia congenita (Thomsen's disease) has myotonia as a feature, but does not exhibit dystrophia, hence Adams, Denny-Brown, and Pear-

son do not classify it as a form of muscular dystrophy. There is still considerable confusion in the classification of Thomsen's disease which I believe is the practical import, in that unequivocal dystrophy features imply a grave prognosis, which is not true in hereditary myotonia (Thomsen's disease.) Only a fourth of the cases are hereditary, hence one can readily conceive of the confusion in the classification of these diseases. Because here is a disease called hereditary, whereas 75 per cent are nonhereditary. Also, in Thomsen's disease, muscular hypertrophy is present.

One author has stated that the classification of the muscular dystrophies is complex and impossible. Also, the primary muscular diseases may at times be indistinguishable from the neurogenic muscular atrophies. This is because in some of the muscular diseases, fibrous scarring may interrupt the lower motor neuron so that some of the muscle fibers may show fibrillation of degeneration. I repeat again, that the case under discussion did not show fibrillation of degeneration, hence must be classified as a muscular dystrophy.

I've had a lot of fun and learned much in trying to pin a specific diagnosis on this case.

Diagnosis: Progressive muscular dystrophy simulating dystonia myotonia, but of the type collected by Welander without familial cataracts or endocrine disorders which actually sets it aside from true dystrophia myotonica (myotonic dystrophy or myotonia atrophica).

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PAUL B. JARRETT, M.D.

This case is difficult to fit into a single diagnosis because of the combination of atrophy and fibrillary twitching with myotonia. Since unusual manifestations of several neuromyopathies may be responsible, let us consider the possibilities and, by elimination, reduce those remaining to probabilities.

- (1) Syringomyelia is associated with muscular atrophy, trophic changes and spasticity; but is also usually associated as well with sensory loss due to destruction of fibers of pain and temperature as they cross in the grey commissure from cavitation and gliosis.

- (2) The next possibility to merit consideration is progressive muscular dystrophy, or the *dys-*

trophies which includes the pseudohypertrophic type, the hypertrophic or Spiller type, the facio-scapulohumeral variety and myotonia dystrophica and myotonia congenita. Progressive muscular atrophy usually has its onset at an early age, and there is an absence of fibrillation — a marked feature of this case. Next, myotonia dystrophica, myotonia congenita or myotonia atrophica. These synonyms were once thought to be separate entities, but are now thought to be stages of a degenerative process spread over several generations, appearing as a cataract in the earlier and eventually as the full blown disease in the later generations. The myotonia responds to quinine as did our patient, but the atrophy does not respond to this medicament. In some cases the cataract is slight or absent. This diagnosis is a possibility — usually though, the atrophy involves the muscles of the face, producing the so called "hatchet face." Our patient did not have this manifestation, nor were there any endocrine features such as testicular atrophy, mentioned in the protocol.

Muscular Atrophies

(3) Next we must consider the muscular atrophies which are heredofamilial disorders characterized by interstitial neuritis and degenerative changes in the anterior horn cells. Of these, the ones to consider are: (a) Amyotrophic lateral sclerosis, which in this case is a possibility because in the beginning it is common to find weakness and atrophy of the muscles of the hands which spreads to the forearms and shoulder girdles. Fibrillations are almost always present. However, there is usually evidence of long tract involvement with hyperactive deep tendon reflexes and a positive Babinski sign.

(b) Progressive muscular atrophy has clinical manifestations similar to amyotrophic lateral sclerosis, but without evidence of long tract involvement, and instead of spasticity in the lower extremities, atrophy and weakness may occur with no loss of deep tendon reflexes until quite late. Myotonia isn't necessarily a feature, or this diagnosis would fit the picture very nicely.

Third Stage

(4) The history of epidemic encephalitis 27 years earlier is possibly of significance. I discovered that there is a third stage of this disease, a progressive chronic phase which may be delayed many years from the acute onset. The longest interval I was able to find was 17 years, but since this man's symptoms began eight years pre-

viously, that would have made an interval of 19 years from the date of his encephalitis onset. What might the symptoms be? They are stated as being varied and sometimes bizarre. In the epidemic form of Von Economo's encephalitis, extreme variability of symptoms and signs in different patients is common. Some cases, according to my source of information, exhibit rigidity and other hyperkinetic phenomena or tremors, choreo-athetoid, myoclonic and other dyskinetic movements. About 50 per cent of these cases exhibit chronic, often progressive symptoms. It is an interesting hypothesis for this case.

(5) Myoclonus may be found in the muscles below a lesion within the vertebral canal which impinges on the posterior nerve roots or on the posterior or lateral portions of the spinal cord, especially if the patient is hyperventilated, but cord tumor doesn't seem likely in the absence of long tract involvement.

My choice would be:

1. Progressive muscular atrophy.
2. Myotonia atrophica appearing late in life.
3. Degenerative chronic phase of Von Economo's encephalomyelitis.

DIFFERENTIAL DIAGNOSIS

Dr. John Walton: This interesting case, like all those discussed in this amphitheater, presents certain inconsistencies and difficulties in diagnosis.

There were three striking clinical features: progressive atrophy of the limb musculature, particularly in the upper limbs and always most severe in the distal part of the extremities; widespread muscular fasciculations; and cramps provoked by movement and associated with difficulty in relaxation of muscles, particularly those controlling the grip. I think it would be as well to consider each of these salient features of the story individually to determine what produced them.

Muscle atrophy was mainly peripheral, was much less severe proximally and in the late stages involved the diaphragm and perhaps the intercostal muscles. Such muscular atrophy could have resulted from disease in the anterior-horn cells, in the spinal anterior nerve roots, in the peripheral nerves or in the muscles themselves. Motor-neuron or motor-system disease, which immediately springs to mind as the probable cause of this clinical picture, is probably a single entity although it may be manifested in three

distinct clinical forms. The first is the progressive muscle atrophy of Aran and Duchenne; the second and most common is amyotrophic lateral sclerosis, with atrophy of muscles in the upper limbs and spasticity in the lower; and the third is progressive bulbar palsy, in which the atrophy and motor weakness usually begin in muscles supplied by the medulla or bulb. The picture of progressive peripheral muscular wasting with widespread fasciculations in this patient is characteristic of progressive muscular atrophy, but the brisk tendon reflexes in the lower limbs suggest an element of lateral sclerosis. One slight inconsistency is the eight-year history, since many patients fail to survive so long. The disease is often fatal within two to six years of the onset. On the other hand, Muller, in a recent study of this disease, found that some patients survived for 15 years, so that this certainly does not rule out the diagnosis.

One possible cause of nerve-root disease in such a case is carcinomatosis involving the meninges, with widespread infiltration of anterior roots and spinal nerves, and this may give rise to a progressive peripheral atrophy. The same statement is true of cervical spondylosis (multiple disk degeneration in the cervical spine), which may result in pressure on multiple roots, causing atrophy in the muscles of the upper limbs, and at the same time may compress the spinal cord, giving increased reflexes and sometimes spasticity in the lower limbs. Of course, inflammatory disease of the meninges, like meningovascular syphilis, may involve nerve roots in the cervical region and also the cord, giving the picture of syphilitic amyotrophy. I think the negative spinal fluid findings rule out several of these diagnoses, and in fact a number of other points, which I shall discuss in a moment, make any of them unlikely.

Peripheral Nerves

Turning now to the peripheral nerves, I wonder if this could have been a polyneuropathy, of which there are multitudinous causes. The absence of sensory loss in this case is very much against the commoner types of polyneuropathy, but, on the other hand, we sometimes see cases of polyneuropathy that are entirely motor and show no sensory changes whatever. There is no doubt that this picture could have been caused by a predominantly motor type of peripheral neuropathy.

Finally, we come to the muscles. A disease of

the myoneural junction like myasthenia gravis could not conceivably produce this clinical picture. Could the condition have been a muscular dystrophy or myopathy? The commonly occurring types of muscular dystrophy usually begin in the proximal muscles of the limbs and only in the late stages do they spread to involve the more distal muscles. This, however, is not true of the very rare distal myopathy described by Gowers and, more recently, by Welander in Scandinavia, but in distal myopathy, fasciculation of muscles is virtually unknown and certainly is never so gross as that seen in this case. Cases of muscular dystrophy of all types practically never show fasciculations. Another hereditary familial myopathy, myotonic dystrophy or dystrophia myotonica, is characterized by myopathic muscular wasting and weakness in the peripheral muscles of both upper and lower limbs, but this disease is always associated with involvement of the sternocleidomastoid, temporal and masseter muscles, and with myotonia, or difficulty in relaxation of grip. Furthermore, there are usually endocrine disturbances in these patients; the males have frontal baldness and gonadal atrophy. Another characteristic and almost invariable feature of dystrophia myotonica is cataract. Apparently, in the case under discussion, the eyes were normal. Furthermore, in all cases of dystrophia myotonica there is some involvement of facial muscles; in this patient the face was normal. For all these reasons I do not think that this was dystrophia myotonica, although the muscular cramps and the failure to relax the grip were very suggestive of myotonia.

Other Causes

Could this have been thyrotoxic myopathy or some other myopathy of metabolic cause? Apart from the weight loss of 40 pounds in five years, which, although somewhat severe, could have been a result of the muscular wasting, there was no evidence of thyrotoxicosis. Sometimes, the myopathy of thyrotoxicosis precedes the other manifestations by a number of years, but I should think that after eight years there would have been some other manifestations of this disease, and certainly none were mentioned in the protocol. In thyrotoxic myopathy, too, atrophy and weakness of muscles are most often proximal; furthermore, fasciculations are rare, although they have been described. I think I can dismiss polymyositis or dermatomyositis very quickly. This is practically always a disease of the proxi-

mal muscles. In some cases there is minimal and in others severe skin involvement; fasciculations are very rare. To me this clinical picture is not at all like that of polymyositis.

Although fasciculation in muscle has been proved to be a phenomenon that arises peripherally, because it persists after blocking or section of the motor nerve, it is undoubtedly true that most patients with widespread fasciculations are proved to have disease of the anterior-horn cells. As I have mentioned already, this phenomenon is seen most clearly and frequently in patients with progressive motor neuron disease—amyotrophic lateral sclerosis, progressive muscular atrophy and progressive bulbar palsy. However, it is occasionally seen in other conditions that may damage the anterior-horn cells, such as syringomyelia, peripheral neuropathy and cervical-disk disease, but it is not usually so marked and widespread as in this case. Fasciculation in muscles may be benign and widespread and is frequently discovered in medical students and medical practitioners who happen to notice that their muscles are twitching. A diagnosis of myokymia has been applied to this condition of widespread benign fasciculations, in which, however, the fasciculations tend to involve two or three motor units, not a single motor unit, and clinically are much coarser than those in motor-neuron disease. The fact that I am discussing the case here today is very good evidence that this was not a benign disorder.

Lastly, I shall consider the muscular cramps and the impaired ability to relax the muscles after a strong grip or after a forceful movement. These were powerful, sustained contractions, which were invariably initiated by voluntary movement and did not occur spontaneously; the description was absolutely characteristic of myotonia. As described, these cramps were not those seen in tetany, salt depletion, hypocalcemia, or hypoparathyroidism. They were not like the aching, nagging pains resulting from the extrapyramidal rigidity of muscles in Parkinson's disease, nor were they like the sharp cramps and the flexor and extensor spasms that one sees in patients with disease of the pyramidal tracts and spasticity. None of these seem to fit the description that we are given in this case; the only one that would explain the clinical findings is myotonia. I do not think that this was a so-called myotonoid disturbance, the slow lethargic failure to relax muscle usually seen in the large,

bulky muscles of patients with Hoffmann's syndrome—in other words in cases of myxedema with muscle involvement. Some patients with myxedema have large, bulky muscles, which tend to be painful and the seat of nagging cramps; relaxation in these muscles is often impaired. Fasciculations would not be expected in Hoffmann's syndrome, and certainly the other findings in this case rule out any suggestion of myxedema. Relief by quinine is also very characteristic of myotonia. Although quinine may often relieve muscular cramps from whatever cause, the relief is usually most striking in patients with myotonia. For this reason, I think that I should have to conclude that the phenomenon that this patient showed was true myotonia. Was the failure to relax the grip made worse by cold?

Colloquy

Dr. Edward P. Richardson Jr.: We do not have sufficient information to answer that question.

Dr. Walton: Did the patient have a test of the basal metabolic rate, or recent calcium and phosphorus determinations?

Dr. Richardson: No.

Dr. Walton: Before attempting to correlate the muscular atrophy, fasciculations and cramps—this apparently myotonic phenomenon—I shall look briefly at the other findings. There was a previous history of encephalitis, which seems clearly to have been encephalitis lethargica. A number of cases of amyotrophic lateral sclerosis occurring as a sequel to epidemic encephalitis have been reported; however, in most of these there was evidence of Parkinson's disease as well as the manifestations of motor-neuron disease. Furthermore, the latent period is not usually so long. In this case it was 27 years before the muscular atrophy began. This relation was recently discussed very fully by Greenfield and Matthews, who reported two cases of amyotrophic lateral sclerosis occurring as a sequel to epidemic encephalitis, but both patients had postencephalitic Parkinson's disease; they referred to other cases in the literature in which there had been no evidence of Parkinson's disease, but simply the picture of amyotrophic lateral sclerosis, apparently as a sequel to encephalitis.

The investigations in this case were never of any great help. The cerebrospinal-fluid examination excluded any of the more active forms of polyneuropathy, in which the protein is usually raised, and the electromyogram simply con-

firmed the presence of fasciculations. Will you tell us about the electromyogram, Dr. Schwab?

Dr. Robert S. Schwab: The examination showed numerous fasciculations, some large, some small and some series of identical-sized ones. Throughout the record there were continual discharges of this type in the legs and arms. These examinations were all done on the ink writer by surface electrode, and I cannot find any evidence that cathode-ray studies were done. When the patient contracted the flexor muscles of the wrist and then was told to relax, he was unable to do so; the contractions continued for 18 seconds and then began to disappear. This is the myotonia response.

Dr. Walton: It is unfortunate that a needle electrode study was not done because in such a patient one might expect to find not only spontaneous fasciculations, but also spontaneous fibrillation or spontaneous contraction of single muscle fibers as distinct from motor units, a phenomenon that is probably seen only in denervated muscle. It would also have been interesting because a needle electrode study in case of true myotonia shows a characteristic myotonic discharge—chains of oscillations of high potential waning slowly and giving a characteristic sound in the loud speaker rather like that of a dive bomber.

Finally, I must try to correlate the different findings in this case. The great difficulty is to reconcile on the one hand muscular atrophy and fasciculations, which are characteristic of motor-neuron disease, particularly when associated with increased reflexes in the lower limbs, and on the other hand the muscle cramps and delayed relaxation, which are very suggestive of myotonia and for which I can think of no other explanation. Classic myotonia occurs only under two circumstances(in myotonia congenita (Thomsen's disease) and in dystrophia myotonica. In patients with myotonia congenita this phenomenon is usually present from birth, affects all voluntary muscles, is made worse by cold and is relieved after the patient has moved about for a while. These cases run an essentially benign course. I cannot believe that this patient had myotonia congenita that did not appear until the age of 46. Dystrophia myotonica may be excluded for reasons already given.

First Described In 1892

A condition of myotonia of acute onset in adult life was described first by Talma in 1892

and called myotonia acquisita. Thomsen, who recently wrote a monograph on myotonia, has discussed this condition in great detail and has come to the conclusion that all Talma's patients were suffering from myotonia congenita, dystrophia myotonica or Hoffmann's syndrome — namely, myxedema, with muscle involvement. Many people now believe that myotonia acquisita is not a distinct entity. Hence, I do not believe that this was a case of myotonia acquisita, and as I have already mentioned the clinical picture was not like that of polyneuritis or thyrotoxic myopathy.

My conclusion must be that this was an example of progressive motor-neuron disease, probably of the type of amyotrophic lateral sclerosis, in which symptomatic myotonia occurred. Recently, there has been a report by Worster-Drought and Sargent of reactive myotonia in cases of polyneuritis; Worster-Drought mentioned in that paper that he had seen active myotonia in a patient with Charcot-Marie-Tooth disease or peroneal muscular atrophy. The authors' explanation for this phenomenon was that the muscles in a state of partial denervation became hyperirritable and so gave rise to the phenomenon of myotonia; this does, however, seem to be a very facile explanation. I shall nevertheless have to conclude that a similar symptomatic or reactive myotonia occurred in this case.

Dr. Benjamin Castleman: Dr. Fisher, would you like to comment on this case?

Dr. C. Miller Fisher: One clinical point that was not touched upon is that the patient was found dead in bed, and I wonder if Dr. Walton would like to comment on that?

Dr. Walton: I did not comment on that because I had taken so much time. The diaphragm was involved, and I believe that he probably had hypostatic pneumonia. I cannot give any other explanation. The sudden death could have been cardiac, but I cannot think that it was related to the muscle disease except so far as he had severe involvement of the muscles of respiration and presumably some degree of respiratory failure.

CLINICAL DIAGNOSES

Bulbar palsy.

Dystrophia myotonica.

DR. JOHN WALTON'S DIASNOSIS

Amyotrophic lateral sclerosis, with symptomatic myotonia.

ANATOMICAL DIAGNOSIS

Progressive muscular atrophy.

PATHOLOGICAL DISCUSSION

Dr. Castlemen: Autopsy did show an acute tracheobronchitis with a great deal of pulmonary congestion; that is all we found as a cause of death. I shall ask Dr. Richardson to discuss the central nervous system findings.

Dr. Richardson: Dr. Walton has given us an illuminating discussion of the various clinical phenomena that occurred in this case and of the diagnostic possibilities. He was puzzled by the occurrence of classic myotonia in what was otherwise a case of progressive muscular atrophy. This feature also stood out prominently in the minds of the clinicians who saw the patient during life. On pathological examination we found that this was a case of motor-neuron degeneration entirely consistent with the chronic, progressive disease of the motor system that Dr. Walton has discussed. The disease appeared to affect principally the anterior-horn cells of the spinal cord, with minimal involvement of the cranial-nerve motor nuclei. Myelin stains of the cord failed to demonstrate any involvement of the lateral corticospinal tracts, so that perhaps the exaggerated tendon reflexes that were described in the first examination were not significantly exaggerated. Cell stains showed widespread disappearance of anterior-horn cells at all levels in the spinal cord, and most of the few

that remained appeared diseased—in that they were pale, or dark and shrunken. There were typical reactive changes in the astrocytes and microglia in the affected regions. As could have been expected, there was secondary degeneration in the anterior roots. All these phenomena indicate a chronic destructive process. Parts of the cord other than those specifically affected were intact, and there were no significant changes elsewhere in the nervous system. Representative sections of skeletal muscles demonstrated findings typical of denervation atrophy, with groups of small muscle fibers, corresponding to diseased motor units, interspersed among groups of fibers of normal size, of which the motor-nerve supply had not been affected. This case must be classified as progressive muscular atrophy rather than amyotrophic lateral sclerosis, because of lack of pyramidal-tract involvement.

A Physician: Does Thomsen's disease and other diseases in which there is myotonia show anything in the muscles?

Dr. Richardson: Thomsen's disease (myotonia congenita) shows nothing that can be recognized as histologically abnormal in the muscle other than some distortion of fibers that may be artifacts due to the abnormal contractility. The muscles in cases of dystrophia myotonica show changes very closely resembling those of progressive muscular dystrophy, which are different from what we find in cases such as this.

100,000 EMPLOYED ON ATOMIC PROJECTS

A handbook issued by the U.S. Office of Education shows a work force totaling 100,000 now is employed on atomic energy projects in the United States, ranging from missiles to medical research. Among other facts, the booklet lists shipment of 12,585 packages of radioisotopes to 2,360 institutions in every state and to 46 foreign countries in 1956. Universities, hospitals and research institutions now have about 400 research contracts with the Atomic Energy Commission in medicine and other "life sciences," and another 400 contracts are in effect in the physical sciences. Atomic energy products were described as useful in the study of anemia, arthritis, cancer, diabetes, heart disease, leukemia, mental diseases, nervous diseases and some chronic illnesses.

NIH ALLOCATES \$46 MILLION IN GRANTS FOR MEDICAL RESEARCH

NATIONAL Institutes of Health has allocated \$46 million in research grants, or 46 per cent of the \$99 million appropriated for the fiscal year ending next June 30. A total of 478 non-federal institutions share in the 3,325 grants, with more than two-thirds of the money going as continuation grants or supplements and the remainder for new projects.

Totals by institutes: Cancer, 384 grants for \$5.9 million; heart, 62 grants for \$9.6 million; allergy and infectious diseases, 620 grants for \$7.6 million; arthritis and metabolic diseases, 579 grants for \$7.1 million; dental, 105 grants for \$968,000; mental health, 189 grants for \$3.9 million; neurological diseases and blindness, 357 grants for \$4.7 million; general, 449 grants for \$5.9 million.

Woman's Auxiliary

MEDICAL AUXILIARY

By Mrs. M. W. Phillips, President-elect,
Auxiliary to the Arizona Medical Association
REPORT OF CHICAGO CONFERENCE

THE three-day annual conference of state presidents, presidents-elect, and national committee chairmen held at the Drake Hotel in Chicago was a potent capsule. Pertinent, vital information was relayed freely and authoritatively by a wealth of resource persons representing not only the American Medical Association, but other national organizations.

"Discussion Group Procedure and Role-Playing" as directed by Martin P. Chworowsky, Ph.D., director of the Greenfield Center for Human Relations, University of Pennsylvania, was the media used to make the entire conference program palatable to approximately 130 enthusiastic delegates. Carrying out the auxiliary theme, "Health is a Joint Endeavor," the group discussion method was used as an effective means of strengthening the individual through the group.

The national program of the auxiliary to the AMA was offered with encouragement to interpret it as how the state and local levels can do their own thinking. However, reminded that in a democracy citizens have the right to their own interest only as it does not conflict with the overall good of everyone, county auxiliaries are urged to fit their programs into those of state and national. In effect, the auxiliary standards are set, but the qualities of the individual are necessary to carry out the program.

An AMA roundup, presented by E. B. Howard, M.D., assistant secretary, informed the delegation of latest developments in the Forand bill, HR 9467, proposed amendment to the Social Security Act. This bill is designed to purchase hospital, surgical, and nursing home care for any of the 13 million eligible recipients of Old Age Survivors Insurance and is considered more serious to the profession and the nation than previous bills because it changes social security by providing *service* benefits requiring governmental control, supervision, and regulation. Hospitals would have contracts with the government

to receive payments; only board men would be permitted to do surgery except in emergency cases; and the surgeons' fees would be set. We can help fight the Forand bill by knowing the facts and writing personal letters to our legislators telling why we oppose HR 9467.

Dr. Howard also reported that probably the second biggest problem to the AMA is the encroachment of third parties, particularly the unions, who are building their own hospitals and hiring panels of physicians, consequently narrowing the field of activity of the independent doctor. The steel workers are considering this move following in the direction of the United Mine Workers.

Results of the management survey will be changes to make AMA better co-ordinated and increase efficiency. A general manager has been hired, and possible extensive remodeling of the headquarters building interior is pending.

The question of covering physicians by social security remains controversially on the horizon. Dr. Howard announced that AMA is firmly opposed to compulsory coverage and emphasized the importance of each physician knowing all the facts before forming an opinion.

Services of a new managing editor have been acquired for Today's Health. Jim Liston, formerly with Better Homes and Gardens, will replace W. W. Bauer whose many assignments have made it impossible for him to devote full time to the magazine. Forthcoming innovations include new features and a startling new cover. The prime goal for Today's Health is still "a copy in every doctor's office."

Recruitment activity was highlighted with the suggestion that emphasis be placed in which-ever allied medical fields would meet local needs. Auxiliaries are urged to work with career groups in conducting this phase of the program.

The urgent necessity of American Medical Education Funds was discussed and continuation of fund raising ideas and promotion encouraged.

Civil defense authorities warned that when we need civil defense, it's too late to start the planning. Working with other civil defense groups was advised for better effectiveness, and in addition to emergency reaction planning, atten-

tion was focused upon knowing one's blood type.

David B. Allman, M.D., president of AMA, prescribed a dose of care mixed with what we say and do as doctors' wives. In complimenting the whole auxiliary program, he maintained that our "greatest angle" is still public relations and that our actions, good and bad, reflect directly upon our husbands. We remain their only salesmen; so let's appraise the impressions we create.

Concern was expressed at the growing tendency of the American character changing from that of a self-directed to a conformist people. This alarming trend is shown not only in the thinking of mature citizens, but also in results of tests given to teenagers and undergraduate

students. The danger of losing sight of the national ideals that made America great is present in the slipping away from liberalized education in all fields. We each need to be jolted into evaluating all the facts before making decisions. Scientific studies and fact-finding groups are essential to intelligent and practical judgments made by the individual. As related to the auxiliary, our joint endeavors are needed to work on problems that can be successful only if everyone contributes in her own way. Whether you play the role of leader, elaborator, co-ordinator, evaluator, energizer, compromiser, or harmonizer, remember that it takes all kinds, and there is a definite place in the auxiliary for you.

AEC MEDICAL COMMITTEE SAYS WEAPONS TESTS SHOULD CONTINUE

A six-man advisory committee on biology and medicine has informed the Atomic Energy Commission that necessary tests of thermonuclear weapons are justified despite radiation hazards. The group thus sides with the AEC in a debate that has been the subject of lengthy congressional hearings and is expected to continue in the next session. Comments the group: "... if we wish to maintain a first class military organization for the safety of the country, we must at least keep abreast of new weapons development. . ."

The committee concedes, however, that tests must be kept within reasonable bounds, particularly when more nations decide to conduct their own tests. "In time the situation may well become serious . . . The question arises in the minds of many thoughtful persons whether the number and power of bombs exploded in tests are being kept at the minimum consistent with scientific and military requirements."

The committee made some estimate of maximum damage to be expected from the annual detonation of atomic explosives equal to the average of all tests held in the last five years. They included leukemia, an increase of 160 deaths and possibly another 36 deaths over current rate of 11,400; birth of handicapped children, an increase of from 160 to 800 above the present rate of 80,000 a year in the U.S.; shortening of life, a few days at the worst; bone cancer, possibly no effects at all in a lifetime.

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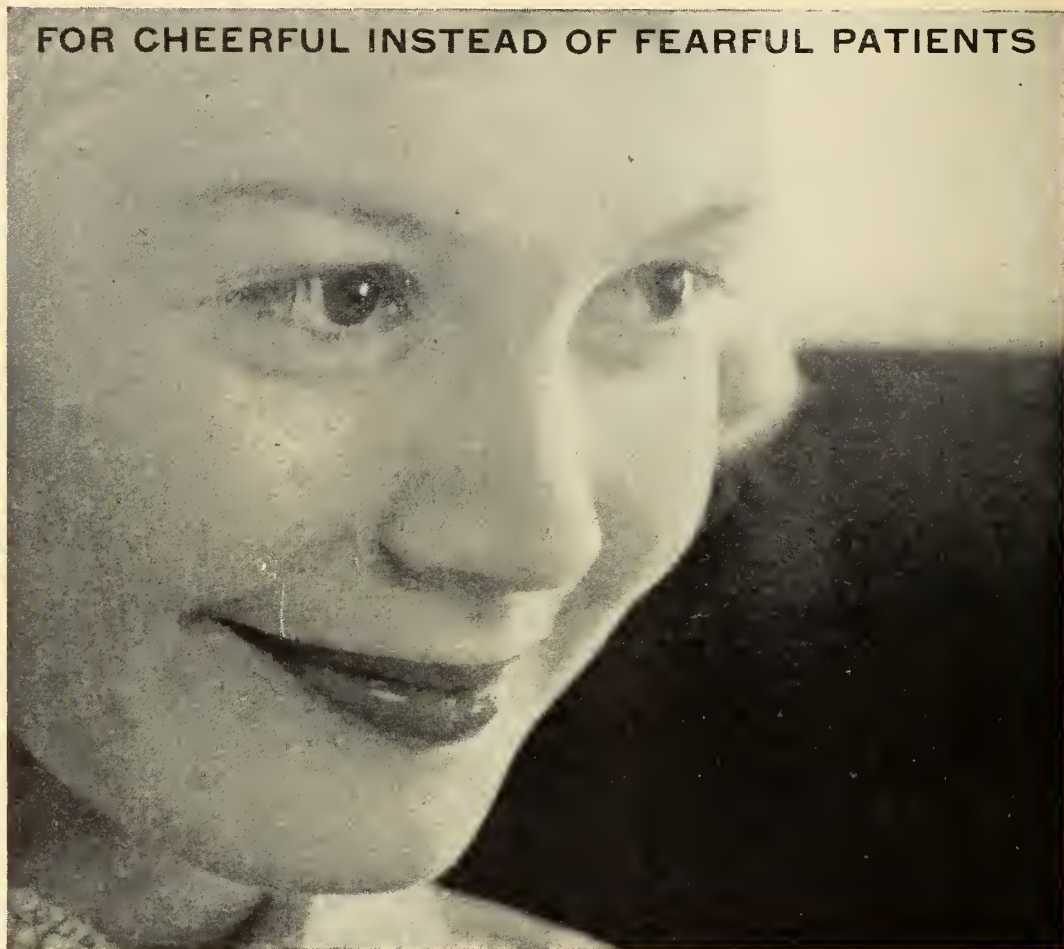
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